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PACIFICORP

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## Lassen Substation

*Proponent's Environmental Assessment  
for the Application of PacifiCorp (U 901 E)  
for a Permit to Construct the Lassen Substation Project*



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136412

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## ACRONYMS AND ABBREVIATIONS

°F	Fahrenheit
°C	Celsius
AAC	all aluminum conductor
AC	alternating current
ACI	American Concrete Institute
ACM	asbestos-containing materials
ACSR	aluminum conductor steel reinforced
ALUPC	Airport Land Use Compatibility Plan
APLIC	Avian Power Line Interaction Committee
APM	Applicant Proposed Measures
APN	Assessor's Parcel Number
ARB	California Air Resources Board
ASCE	American Society for Civil Engineers
AST	aboveground storage tanks
BACT	best available control technology
BLM	U.S. Bureau of Land Management
BMP	Best Management Practice
°C	degrees Celsius
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAD	Computer aided design
CAFE	Corporate Average Fuel Economy
CalEPA	California Environmental Protection Agency
Cal Fire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFG	California Department of Fish and Game (now the CDFW)
CDFW	California Department of Fish and Wildlife (formerly CDFG)
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulation
CGS	California Geological Survey
CH <sub>4</sub>	Methane
CNEL	Community Noise Equivalent Level
CNPS	California Native Plant Society
CO	Carbon monoxide
CO <sub>2</sub>	Carbon dioxide
CO <sub>2</sub> (e)	Carbon dioxide equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
Cu	Copper

dB	decibels
dBA	A-weighted decibels
dBV/m	dB per microvolt per meter
DC	direct current
District	Mt. Shasta Fire Protection District
DOC	California Department of Conservation
DOF	State of California Department of Finance
DTM	digital terrain mapping
DWR	California Department of Water Resources
EMF	electric and magnetic fields
EPR	ethylene propylene rubber
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FHSZ	Fire Hazard Severity Zones
FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
GCC	global climate change
GHG	greenhouse gas
GIS	Geographic Information System
GLO	General Land Office
GO	General Order
GPS	Global Positioning System
GWP	guyed wood poles
HCP	habitat conservation plan
HFCs	hydrofluorocarbons
HFE	hydrofluorinated ethers
HMP	Hazard Mitigation Plan
Hz	hertz
I-5	Interstate 5
IEEE	Institute of Electrical and Electronics Engineers
IOU	investor-owned public utility
JHS	Jefferson High School
kcil	Kilo Circular Mil
kV	kilovolt
kVA	Kilovolt amperes
kV/m	kilovolt per meter
LBP	lead-based paint
lbs	Pounds per day
LCFS	Low Carbon Fuel Standard
Ldn	day-night sound level
Leq	equivalent sound level
LGFRS	Local Government Financial Reporting System

Lmax	maximum sound level
LOS	Level of Service
LSAA	Lake and Streambed Alteration Agreement
MBTA	Migratory Bird Treaty Act
mG	milligauss
MHz	megahertz
mm	millimeter
MND	Mitigated Negative Declaration
MSRPD	Mt. Shasta Recreation and Parks District
MUSD	Mount Shasta Union School District
MVA	megavolt ampere
MW	megawatts
N <sub>2</sub> O	nitrous oxide
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
NEIC	the Northeast California Information Center
NESC	National Electric Safety Code
NF <sub>3</sub>	nitrogen trifluoride
NOX	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O <sub>3</sub>	Ozone
OC	Open Space/Conservation Element
OHWM	Ordinary High Water Mark
OPR	Office of Planning and Research
PEA	Proponent's Environmental Assessment
PEMC	palustrine emergent wetlands
PFCs	perfluorocarbons
PGA	peak ground acceleration
PG&E	Pacific Gas and Electric
PM <sub>10</sub>	particulate matter <10 microns
PM <sub>2.5</sub>	particulate matter <2.5 microns
POWER	POWER Engineers, Inc
PP&L	Pacific Power and Light
ppm	parts per million
PRC	California Public Resources Code
Project	Lassen Substation Project
PSS	Professional Service Industries, Inc.
PTC	Permit to Construct
RCRA	Resource Conservation and Recovery Act
REC	recognized environmental condition

RI	Radio Interference
RN	Radio Noise
ROG	reactive organic gases
ROW	Right-of-Way
RWQCB	Regional Water Quality Control Board
SCAB	South Coast Air Basin
SCAPCD	Siskiyou County Air Pollution Control District
SF <sub>6</sub>	Sulfur hexafluoride
SHPO	State Historic Preservation Office
SOC	Species of Concern
SPCC	Spill Prevention, Countermeasure and Control
STAGE	Siskiyou Transit and General Express
SUHSD	Siskiyou Union High School District
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TMDL	total maximum daily loads
TVI	Television Interference
UBC	Uniform Building Code
U.S.	United States
U.S.C.	United States Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VRM	Visual Resource Management
WEAP	Worker Environmental Awareness Program
WECC	Western Electricity Coordinating Council
WUSED	Weed Union Elementary School District
XLPE	Cross-Linked Polyethylene
µg/m <sup>3</sup>	micrograms per cubic meter

## 1.0 PROPONENT'S ENVIRONMENTAL ASSESSMENT SUMMARY

The Lassen Substation Project (Project) consists of removing the existing Mt. Shasta Substation and replacing it with a new substation, Lassen Substation, on a site adjacent to the existing Mt. Shasta Substation. The Project also consists of transmission line upgrades along Line 2 and the upgrade of two existing distribution lines. The existing Mt. Shasta substation would be removed once the Lassen Substation is operational. PacifiCorp's Mt. Shasta Substation is located at 404 S. Old Stage Road in an unincorporated part of Siskiyou County, California. The proposed Lassen Substation site consists of two parcels (APN 036-220-280 and APN 036-220-170) comprising approximately 4.5 acres.

As part of the proposed Project, 36 existing wood poles along the existing 69 kilovolt (kV) transmission line (Line 2, approximately 1.5 linear miles), that transports bulk electrical power into and from the existing Mt. Shasta Substation, would be upgraded to a higher pole class to remove and avoid sag in the transmission line and to comply with the California Code of Regulations, Title 8 and California Public Utilities Commission (CPUC) General Order 95 (GO-95) "Rules for Overhead Electric Line Construction," load requirements. The transmission line would initially operate at 69 kV, but would be constructed to 115 kV transmission line standards. The proposed Project would increase capacity to meet current and future projected demand.

The Project also includes upgrades to the existing distribution system to meet current capacity requirements and to meet future load growth. The distribution system would be upgraded from a 4.16 kV line to a 12.47 kV line. The distribution line would be partially reconductored and the 12.47 kV distribution system would be reconnected in a new configuration to receive supply from three breakers at the proposed Lassen Substation. As part of the distribution line upgrade, approximately 1,200 feet of underground cable would be installed to increase capacity of an existing underground line.

This Proponent's Environmental Assessment (PEA) describes the affected environment and Project related environmental effects for the following resources.

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality and Greenhouse Gas Emissions
- Biological Resources
- Cultural Resources
- Geology and Soils
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

The Project was planned and engineered to avoid or minimize environmental impacts while still meeting Project objectives stated in Chapter 3, Project Description. This PEA evaluates potential environmental impacts that could result from the construction and operation of the Project. PacifiCorp

has proposed Applicant Proposed Measures (APMs) to minimize or avoid impacts. Implementation of the APMs described in Section 4.0 would ensure that all Project impacts would be less than significant for all of the resources listed above. This PEA has been prepared in compliance with the CPUC guidelines. The California Environmental Quality Act (CEQA) Initial Study Checklist was used as the format for describing potential impacts.

There are no known areas of controversy, and no major issues that must be resolved related to the Project.

PacifiCorp is submitting this PEA to the CPUC in support of its application for a Permit to Construct (PTC) the Project. The CPUC holds jurisdiction over the siting of transmission projects proposed by investor-owned utilities within the state of California and is the lead agency with respect to such projects under CEQA (Cal Pub. Res. Code Sec. 21000 et seq.). Therefore, in the application of which this PEA is a part, PacifiCorp seeks from the CPUC a PTC approving the construction of the Project.

Because all Project impacts are less than significant or less than significant with implementation of the APMs listed in this PEA, it is anticipated that the CPUC would be able to prepare a Mitigated Negative Declaration (MND) for its review of the Project under CEQA. After the necessary permits are obtained, construction is expected to take approximately six to 12 months to complete. PacifiCorp seeks to have the Project in operation by December 2017.

### **Public Outreach**

PacifiCorp conducted the following activities as part of the public involvement/outreach process for the proposed Project:

- PacifiCorp conducted a Public Open House on July 8, 2010 from 6:00 p.m. to 8:00 p.m. at the Community Building in Mt. Shasta. The open house was designed to provide area residents, property owners, businesses, local officials, and others interested in the project the opportunity to review information about the project, review maps, and the opportunity for the public to ask questions and submit comments;
- Postcards were mailed to property owners and current occupants in the immediate vicinity of the proposed Project;
- An ad was placed in the local newspaper in June 2010 informing the public of location, date, and time of the public open house; and,
- A press release was released on June 30, 2010 to encourage interested local parties to attend the public open house session to review the proposed Project.

## 2.0 PROJECT PURPOSE AND NEED

The California Public Utilities Commission (CPUC) has repeatedly acknowledged that the issue of project “need” is beyond the scope of a Permit to Construct (PTC) application. See, e.g., Assigned Commissioner’s Ruling dated October 16, 2002, A.01-07-004, p. 5 (“the need for the project is outside the scope of this [Atlantic-Del Mar PTC] proceeding”); D.94-06-014, 55 CPUC 2d 87, 92 (PTC review “focuses solely on environmental concerns, unlike the Certificate of Public Convenience and Necessity (CPCN) process which considers the need for and economic cost of a proposed facility”); GO-131-D, Section IX.B.1.f (“an application for a permit to construct need not include...a detailed analysis of purpose and necessity”). Nonetheless, PacifiCorp provides the following discussion of the purpose and need for the Project for informational purposes.

The Mt. Shasta Substation currently delivers power to approximately 4,156 customers. For reliability, service and safety reasons, PacifiCorp plans to replace the existing Mt. Shasta Substation and construct the new Lassen Substation. The wood framing of the Mt. Shasta Substation is deteriorating and the transformers, regulators, breakers, switches, connectors and bus work have also begun to deteriorate due to age and corrosion. Over the next few years, it is anticipated that the substation could reach the end of its useful life. Due to surrounding physical and land use constraints, there is insufficient space to allow for the rebuild and expansion of the existing substation at its current location.

PacifiCorp proposes to: remove the existing Mt. Shasta Substation and replace it with a new substation, to be called Lassen Substation; upgrade transmission Line 2, upgrade two distribution lines; and install approximately 1,200 feet of underground cable to increase capacity of an existing underground distribution line. The preferred location for the Lassen Substation is located at 504 S. Old Stage Road, approximately 275 feet (84 meters) east of the current Mt. Shasta Substation site. The new site is suitable for permitting, construction, and the accommodation of all necessary operational equipment. The new Lassen Substation would be approximately 280 feet by 212 feet or 1.4 acres in size. In addition, 36 existing wood poles associated with the 69 kV transmission line (Line 2) that transports the bulk electrical power into and from the existing Mt. Shasta Substation would be rebuilt, upgraded, and routed into the new Lassen Substation.

The Project is needed to meet four objectives:

- **Replace the deteriorated Mt. Shasta Substation:** to ensure the reliability of the system, the existing wood structure substation would be replaced with a new steel pole constructed substation at the proposed Lassen Substation site.
- **Meet electrical system demand:** to ensure that the system has adequate capacity to safely and reliably meet local and contractual system demand.
- **Meet future transmission conversion needs:** the new substation and upgraded poles would be designed and built to accommodate operating within a 115 kV transmission system.
- **Complete Project by December 2017:** to be operational to meet the projected summer peak loads of 2018.

Without this project, and with continued load growth in the area, approximately 4,156 customers would be at risk of an extended outage during an equipment failure caused by overload or through aging substation equipment failure.

### Mt. Shasta Substation

The existing Mt. Shasta Substation contains two transformers: a 12.5 megavolt ampere (MVA) and a 3.75 MVA. The 69 kV to 12.5 kV transformer (T-3521) has a nameplate rating<sup>1</sup> of 12.5 MVA and delivers electricity to approximately 4,156 customers. The T-3521 transformer peak during the summer of 2008 was at 90 percent of its transformer guideline rating and peaked again at 103 percent during the winter of 2009. A light industrial bottling facility closed in December 2010, and seasonal loading peaks afterward reflect the loss of that load. However, a similar facility plans to begin operation in 2016 to bring summer and winter load peaks to 100 percent of the seasonal loading capabilities of the transformer, with the connection of 3 megawatts (MW) of additional load in 2018.

The 3.75 MVA, 69 to 4.16 kV transformer bank serves approximately 703 customers and is not at risk of overloading at this time.

The Mt. Shasta Substation is in a deteriorated condition. The substation consists of wood pole construction and has been susceptible to wood rot and damage by birds boring holes into the poles and cross members. It is anticipated that over the next few years the substation could reach the end of its useful life. Furthermore, the existing Mt. Shasta Substation property is not large enough to accommodate the necessary equipment required to meet the additional electrical capacity.

### Meet Electrical Service Demand

A light industrial bottling facility scheduled to begin operation in 2016 has requested delivery of new load beyond the capability of Mt. Shasta Substation transformer T-3521. An increase in transformer capacity is required in order to supply the new load. In addition, load growth in the Mt. Shasta area has historically been approximately 2.0 percent for summer peak loads prior to 2008. Loads since 2008 have declined in the region (see Table 2-1 below). The general growth in the Mt. Shasta region is projected to further increase the need for additional transformer capacity. It has been projected that the load would exceed the summer guideline rating for the Mt. Shasta Substation and accelerate the T-3521 transformer loss of life beyond acceptable industry standards. This projected exceedance would put those customers served by this transformer at risk of an extended outage during equipment failure. The customers supplied by the 69 kV to 4.16 kV transformer are not at risk of outage at this time.

**TABLE 2-1 T-3521 TRANSFORMER PEAK LOADS**

TIME	PEAK LOAD KILOVOLT AMPERES (KVA)	TRANSFORMER RATING PERCENTAGE BASED ON SEASONAL CAPABILITY	COMMENT
Summer of 2007	11,908	95%	
Summer of 2008	11,246	90%	
Summer of 2009	10,372	83%	
Summer of 2010	9,652	77%	
Summer of 2011	11,080	94%	Bottling plant closed
Summer of 2012	8,286	66%	Bottling plant closed
Summer of 2013	8,921	71%	Bottling plant closed

<sup>1</sup> A *nameplate rating* is the maximum output of the transformer at full load at its rated power factor as specified on the nameplate attached to the equipment.

TIME	PEAK LOAD KILOVOLT AMPERES (KVA)	TRANSFORMER RATING PERCENTAGE BASED ON SEASONAL CAPABILITY	COMMENT
Summer of 2014	8,727	70%	Bottling plant closed
Winter of 2007-8	14,208	91%	
Winter of 2008-9	14,474	93%	
Winter of 2009-10	16,029	103%	
Winter of 2010-11	13,294	85%	Bottling plant closed
Winter of 2011-12	13,095	84%	Bottling plant closed
Winter of 2012-13	13,414	86%	Bottling plant closed
Winter of 2013-14	14,163	91%	Bottling plant closed

Source: PacifiCorp 2015.

Load transfer to either Weed Junction Substation (to the north) or North Dunsmuir Substation (to the south), which are the two substations in closest proximity to the Mt. Shasta Substation, is not feasible due to the distance from the Mt. Shasta Substation to either substation. The distance from the Mt. Shasta Substation to Weed Junction is approximately 10 miles to the north, and the distance from Mt. Shasta to North Dunsmuir Substation is approximately 6.5 miles to the south. The North Dunsmuir Substation also has insufficient transformer capacity available for use.

#### **Meet Future Transmission Conversion Needs**

PacifiCorp intends to convert the 69 kV Line 2 to 115 kV in the future as part of a long-term plan to separate area subtransmission from the 115 kV Line 14, which is a dedicated Western Electricity Coordinating Council (WECC) transmission path carrying scheduled power flow. To prepare for this conversion, the proposed new substation would be designed for the 115 kV system but initially operate at 69 kV.

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## 3.0 PROJECT DESCRIPTION

### 3.1 Project Location

The proposed Project is located in in the City of Mt. Shasta, in unincorporated Siskiyou County. The existing Mt. Shasta Substation and proposed Lassen Substation sites are both located west of Interstate 5 (I-5), in the south central portion of Siskiyou County (refer to Figure 3-1, Regional Location and Figure 3-2, Project Overview). The Lassen Substation site is mapped in Township 40 North, Range 04 West, Section 21 northwest quadrant, of the City of Mt. Shasta Quadrangle of the U.S. Geological Survey's (USGS) 7.5-Minute Topographic Series.

Land uses in the vicinity of the existing and proposed substation sites and along the existing Line 2 are primarily rural residential, agricultural, and forest-related. The physical address for the proposed Lassen Substation site is 504 South Old Stage Road, Mt. Shasta, California, Assessor's Parcel Number (APN) 036-220-280. PacifiCorp also owns the adjacent property located at 506 South Old Stage Road (APN 036-220-170). While this property was purchased to avoid potential impacts and provide a buffer to adjacent residents, PacifiCorp would use this site as the material laydown yard during construction of the proposed Project, to reduce construction-related vehicle traffic on local roads. The overhead and underground distribution line locations are located in the Siskiyou County and extend into the City of Mt. Shasta (refer to Figure 3-2). The area in the vicinity of the distribution line upgrade consist of residences, a mobile home park, a hotel, a senior apartment community, undeveloped land, I-5, a power substation, a gasoline station, and commercial buildings. The proposed 1.5 mile reconstruction of the existing transmission line and the overhead and underground distribution line locations are within existing easements held by PacifiCorp.

### 3.2 Existing System

PacifiCorp has a transmission system comprised of several substations connected by 115 kV and 69 kV transmission lines near the City of Mt. Shasta in the northern California area (refer to Figure 3-3, System Schematic). Line 14 is a 115 kV transmission line that connects the Copco 2 substation near the California/Oregon border to Pacific Gas and Electric's (PG&E's) Cascade substation near Lake Shasta. The 69 kV Line 2 connects the Copco 2 substation to the Cascade substation with other substations in between, such as the Weed Junction substation and Mt. Shasta Substation.

### 3.3 Project Objectives

The replacement of the Mt. Shasta Substation is necessary to improve reliability and meet current and future transmission demand in the City of Mt. Shasta area in order to continue safe and reliable electric service to customers in the area, and to meet contractual obligations with electrical customers. The basic objectives of the proposed Project are as follows:

- **Replace the deteriorated Mt. Shasta Substation:** to ensure the reliability of the system, the existing wood structure substation would be replaced with a new steel pole constructed substation at the proposed Lassen Substation site.
- **Meet electrical system demand:** to ensure that the system has adequate capacity to safely and reliably meet local and contractual system demand.
- **Meet future transmission conversion needs:** the new substation and upgraded transmission poles would be designed and built to accommodate operating within a 115 kV transmission system.
- **Complete Project by December 2017:** to be operational to meet the projected summer peak loads of 2018.

### 3.4 Proposed Project

PacifiCorp proposes to replace the existing Mt. Shasta Substation with a new substation, Lassen Substation, on a site adjacent to the existing Mt. Shasta Substation (refer to Figure 3-4, Proposed Lassen Substation). The proposed Lassen Substation site consists of two parcels (APN 036-220-280 and APN 036-220-170) comprising approximately 4.5 acres. The existing substation would be removed once the Lassen Substation is operational.

As part of the proposed Project, 36 existing wood poles along the existing 69 kV transmission line (Line 2, approximately 1.5 linear miles) would be replaced to accommodate an upgraded distribution underbuild conductor and to comply with the California Code of Regulations, Title 8 and CPUC GO-95 load requirements. The transmission line would operate at 69 kV, but would be constructed as a 115 kV transmission line. The proposed Project would increase capacity to meet current and future projected demand.

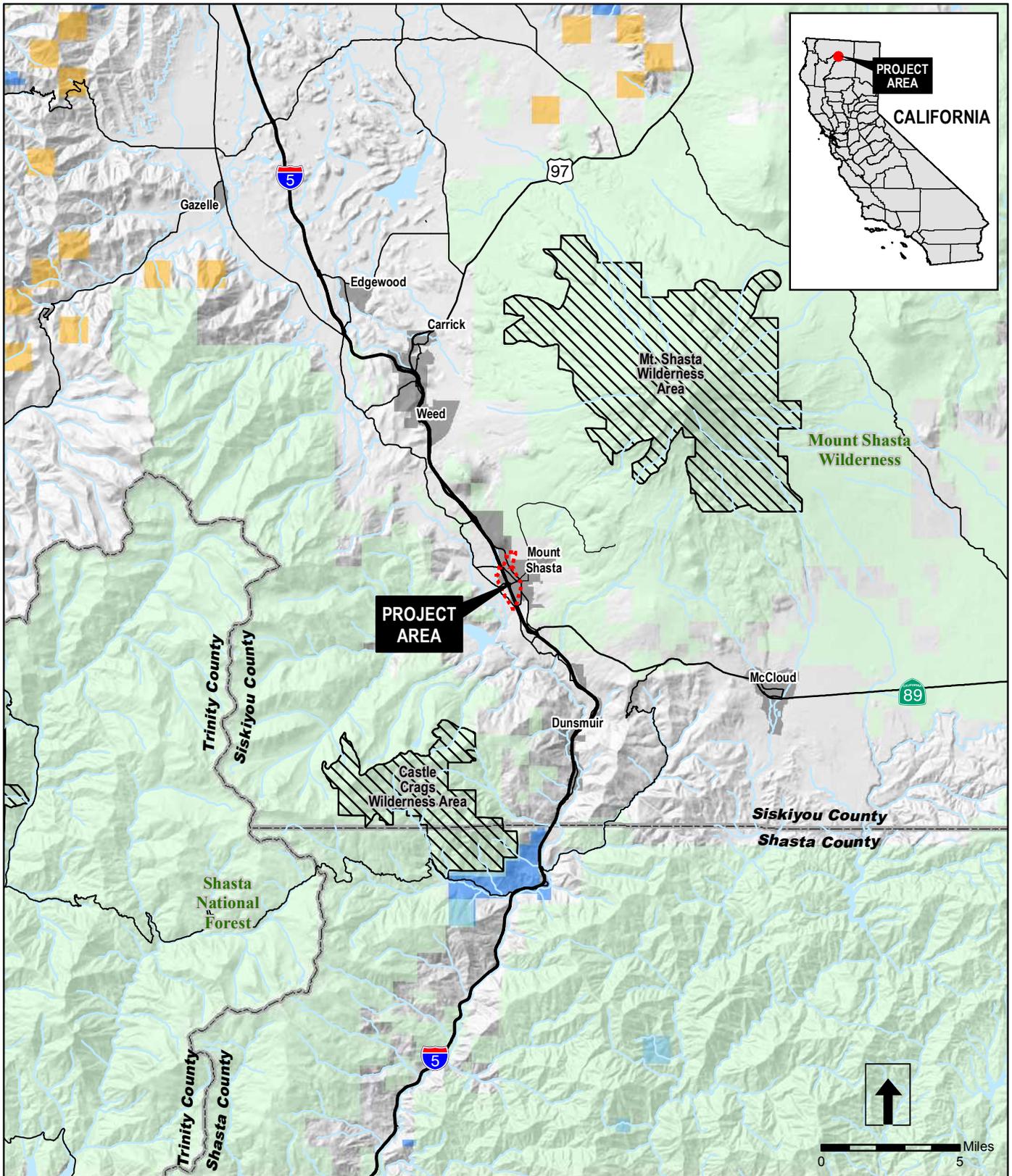
The Project also includes upgrades to the existing distribution system to meet current capacity requirements and to meet future load growth. The distribution lines would be upgraded from a 4.16 kV line to a 12.47 kV line. The distribution lines would be partially reconducted and the 12.47 kV distribution lines would be reconnected in a new configuration to receive supply from three breakers at the proposed Lassen Substation. As part of the distribution line upgrade, approximately 1,200 feet of underground cable would be installed to increase capacity of an existing underground line.

Project components including the existing substation site, new Lassen Substation site, Line 2 route alignment, existing pole replacement locations, and the tentative locations of pull/tension sites and access roads are shown on Figures 3-5A and 3-5G, Project Components.

PacifiCorp is proposing to:

- Construct a new Lassen Substation.
- Replace 36 transmission wood poles on Line 2 with upgraded wood poles framed for 115 kV and distribution underbuild.
- Install three new wood poles to connect the existing transmission system to the new Lassen Substation.
- Connect the existing transmission lines from the existing substation into the new substation through installation of 200 feet of overhead line.
- Connect the cable pulling vault to the existing distribution system through installation of three 300-foot underground conduits.
- Install three underground distribution circuits from cable pulling vault to a new underground/overhead transition pole.
- Reconductor two existing distribution lines.
- Install three 12.5 to 4.16 kV stepdown transformers on existing poles in Mt. Shasta.
- Install an underground cable approximately 1,200 feet to increase capacity of an existing underground line.
- Remove the existing Mt. Shasta Substation.

The new substation would connect to Line 2 and would contain a 69 kV/12.5 kV, 15/20/25 MVA-rated transformer with a load tap changer supplying enclosed 12.5 kV switchgear and a 12.5 kV capacitor bank.



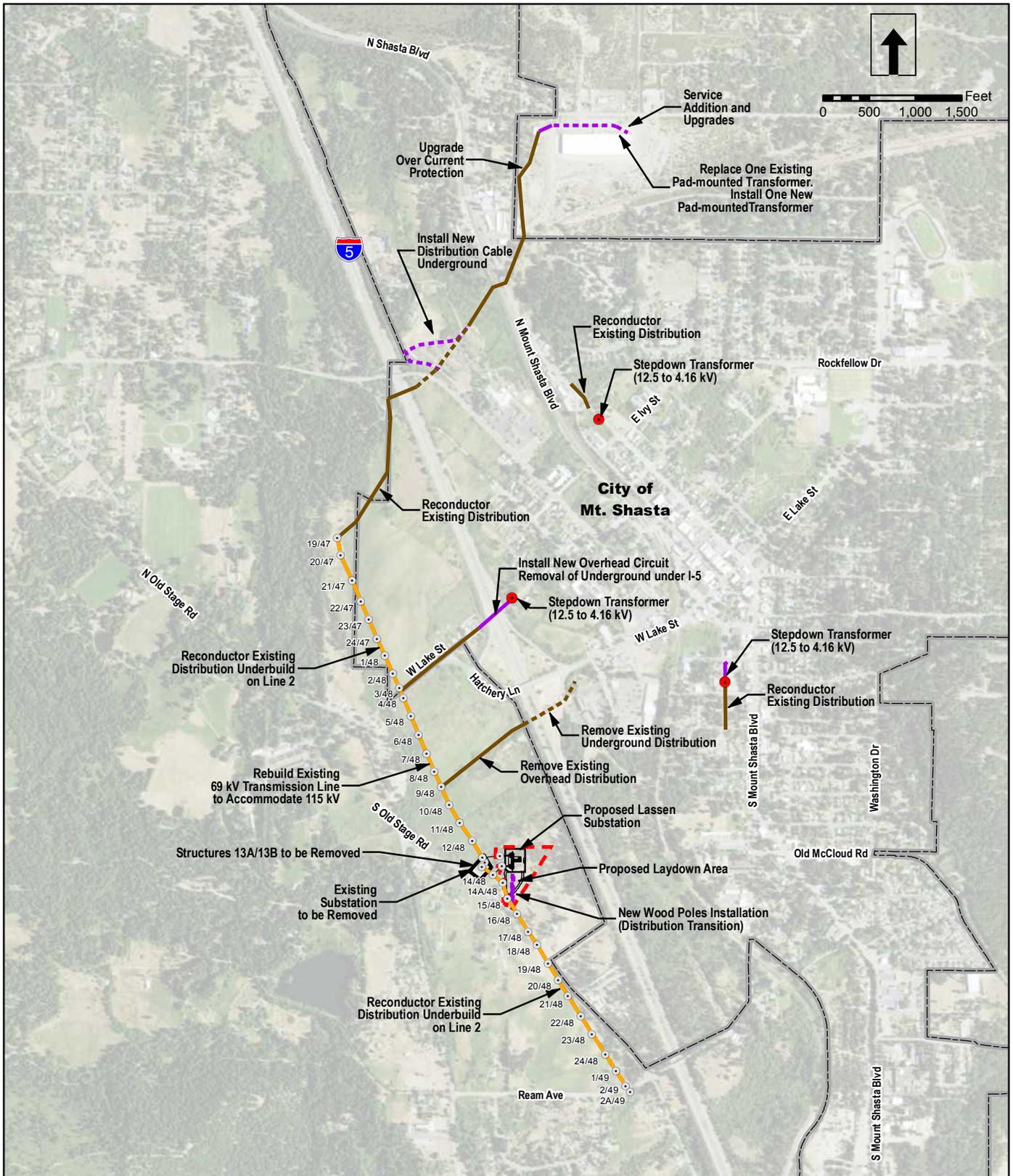
**LEGEND**

- |   |   |
|---|---|
|  PROJECT AREA    |  WILDERNESS AREA           |
|  CITY LIMITS     |  USDA FOREST SERVICE       |
|  COUNTY BOUNDARY |  BUREAU OF LAND MANAGEMENT |
|   |  STATE LANDS               |

**FIGURE 3-1  
REGIONAL LOCATION**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

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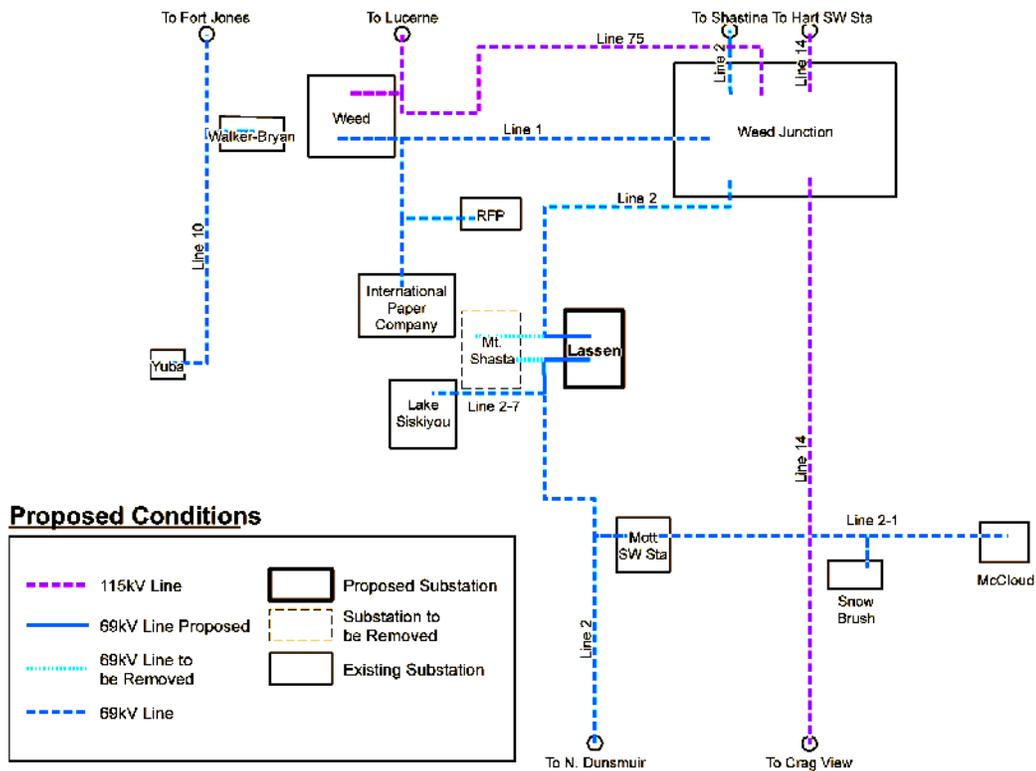
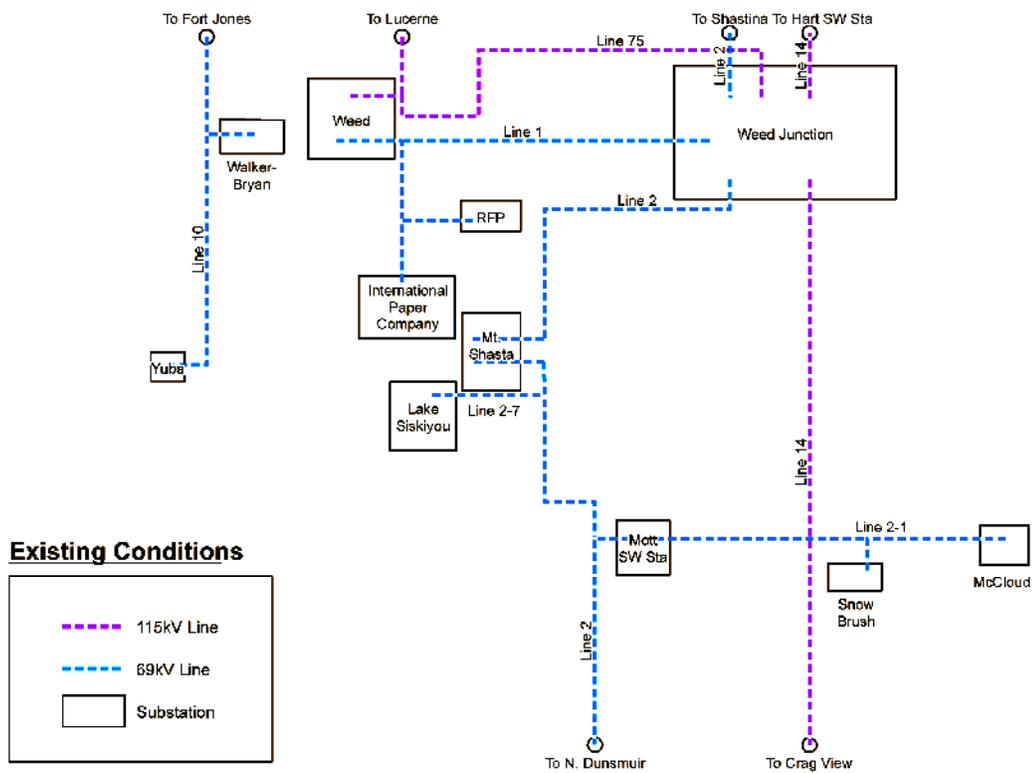
LEGEND	
	TRANSMISSION STRUCTURE
	EXISTING TRANSMISSION LINE TO BE REBUILT
	EXISTING OVERHEAD DISTRIBUTION
	EXISTING UNDERGROUND DISTRIBUTION
	PROPOSED OVERHEAD DISTRIBUTION
	PROPOSED UNDERGROUND DISTRIBUTION
	INSTALL 12.47 TO 4.16 KV STEPDOWN
	PROPOSED LASSEN SUBSTATION SITE
	EXISTING SUBSTATION (MT. SHASTA)
	CITY LIMITS

**FIGURE 3-2  
PROJECT OVERVIEW**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

Source: ArcGIS Imagery, 2010.

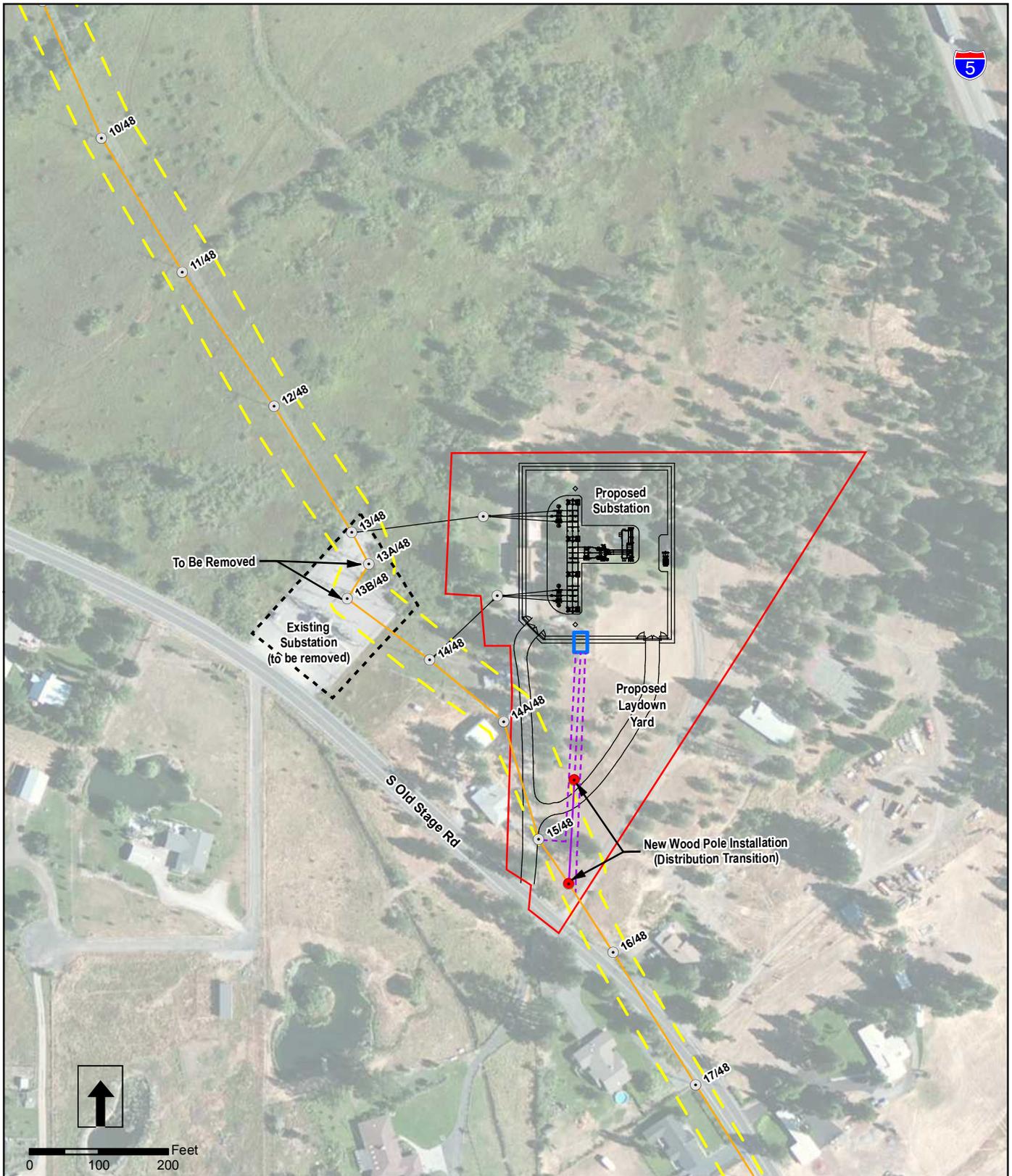
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**FIGURE 3-3  
SYSTEM SCHEMATIC**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

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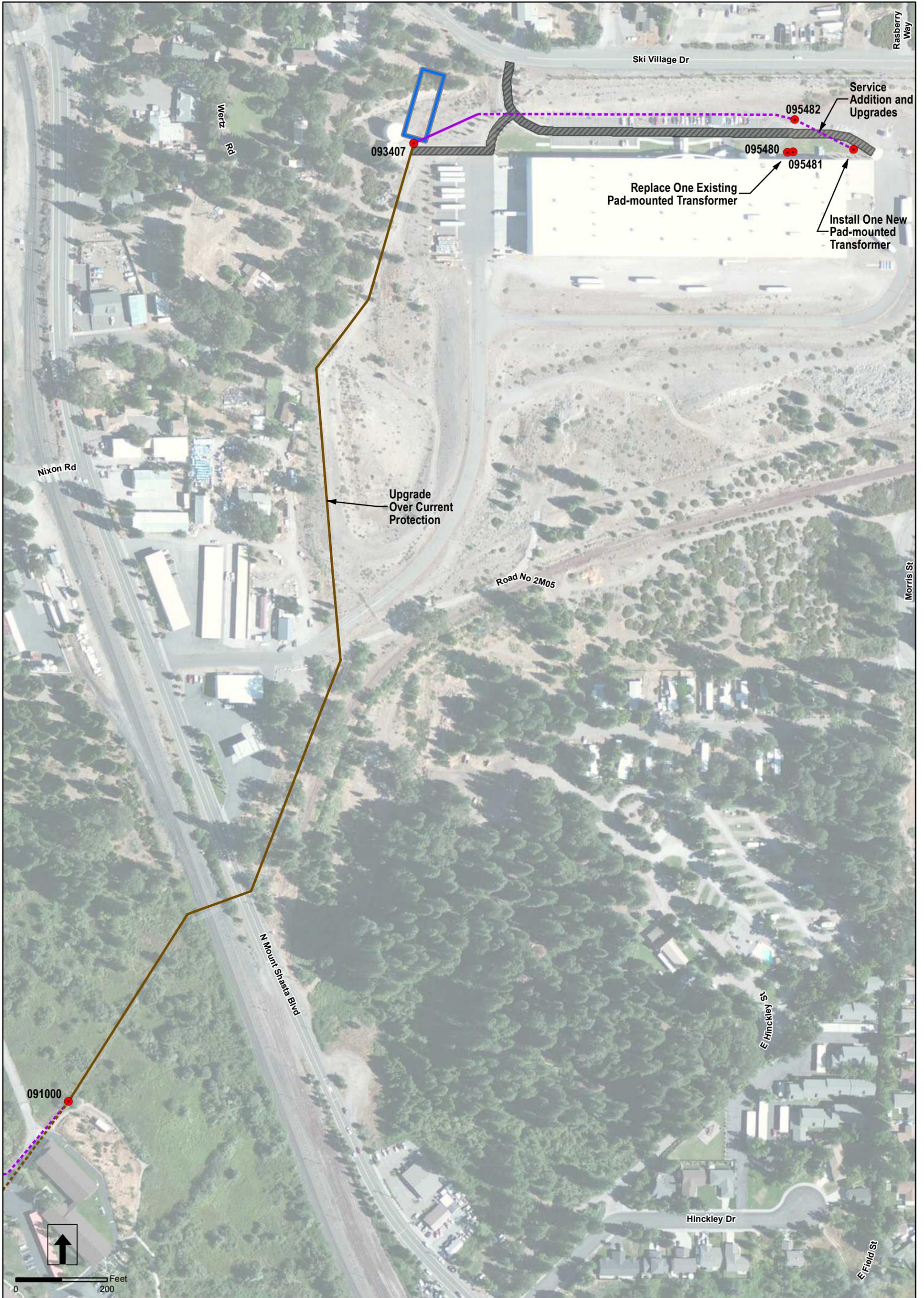
- DISTRIBUTION FEATURE
- TRANSMISSION STRUCTURE
- EXISTING TRANSMISSION LINE TO BE REBUILT
- PROPOSED OVERHEAD DISTRIBUTION
- PROPOSED UNDERGROUND DISTRIBUTION
- PROPOSED SUBSTATION DESIGN
- CABLE PULLING VAULT
- EXISTING SUBSTATION (MT. SHASTA)
- PROPOSED LASSEN SUBSTATION PARCEL
- RIGHT OF WAY (ROW)

**FIGURE 3-4  
PROPOSED LASSEN  
SUBSTATION**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

Source: ArcGIS Imagery, 2010.

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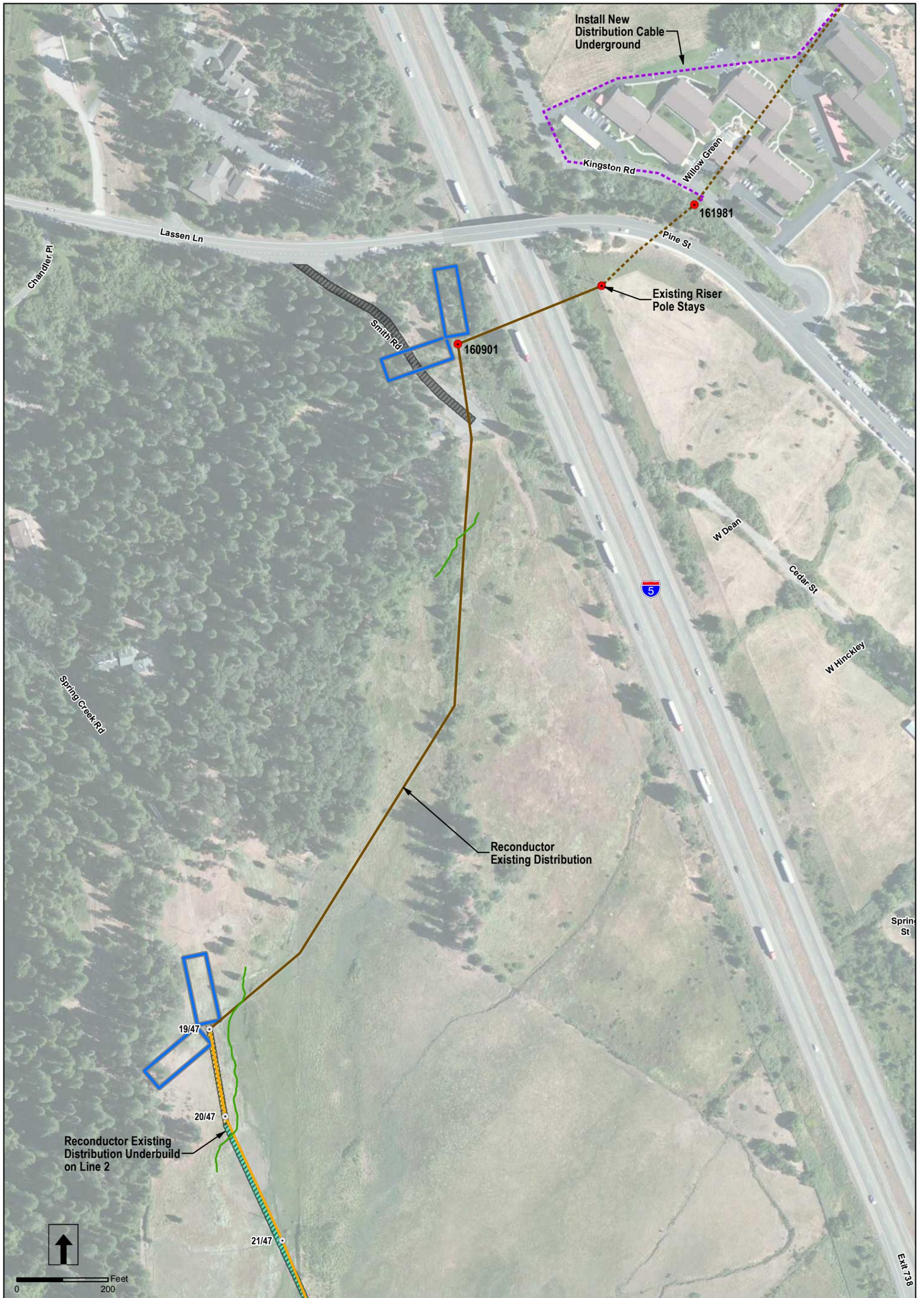
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<span style="color: grey;">○</span>	TRANSMISSION STRUCTURE		PROPOSED LASSEN SUBSTATION PARCEL
	EXISTING OVERHEAD DISTRIBUTION		PULLING AND TENSIONING
	EXISTING UNDERGROUND DISTRIBUTION		EXISTING ACCESS
	PROPOSED OVERHEAD DISTRIBUTION		
	PROPOSED UNDERGROUND DISTRIBUTION		
	EXISTING TRANSMISSION LINE TO BE REBUILT		

**FIGURE 3-5A  
PROJECT COMPONENTS**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

Source: ArcGIS Imagery, 2010.

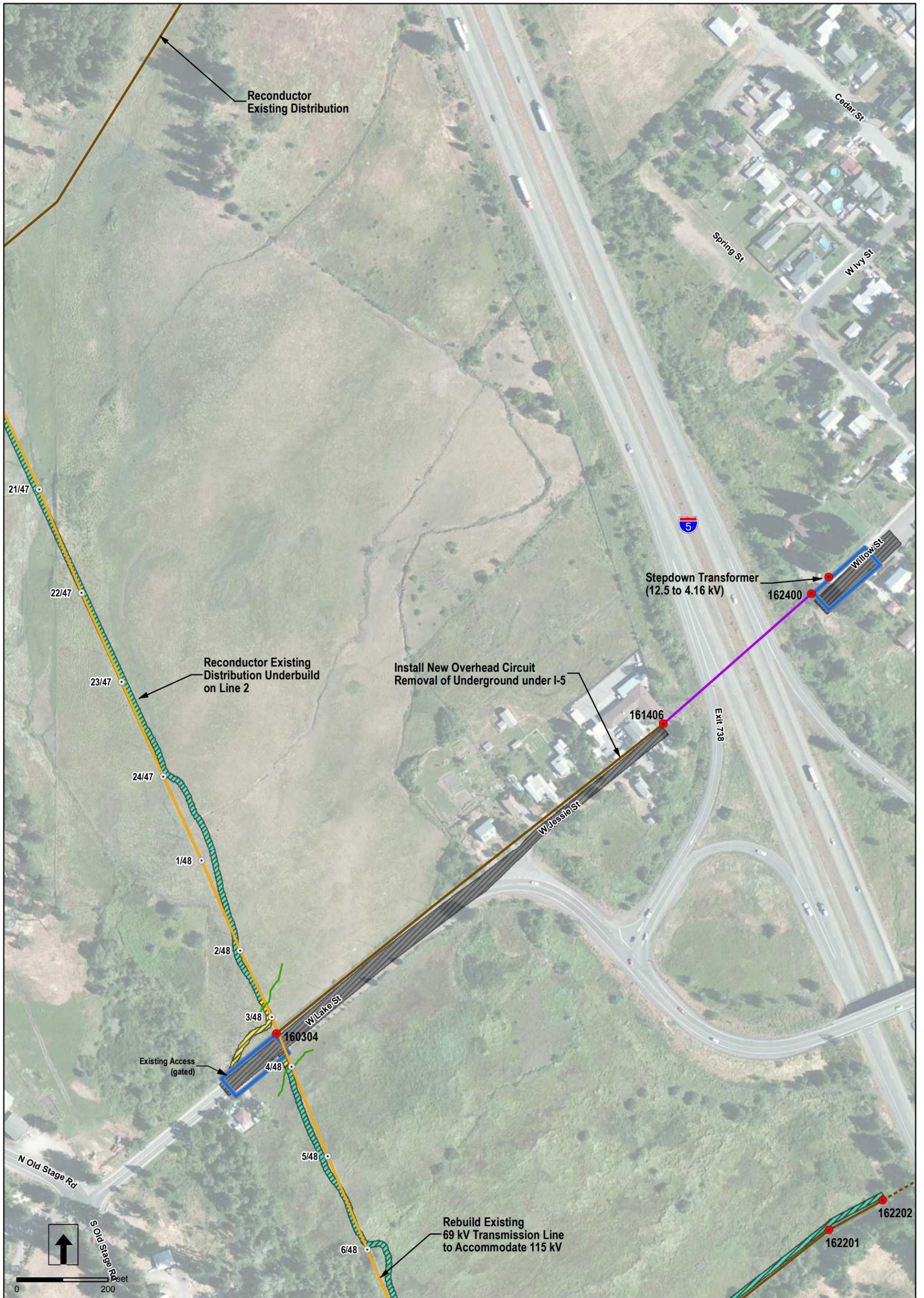
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<b>LEGEND</b>		<b>FIGURE 3-5B PROJECT COMPONENTS</b>	
<ul style="list-style-type: none"> <li><span style="color: red;">●</span> DISTRIBUTION FEATURE</li> <li><span style="color: grey;">○</span> TRANSMISSION STRUCTURE</li> <li><span style="color: orange;">—</span> EXISTING TRANSMISSION LINE TO BE REBUILT</li> </ul>	<ul style="list-style-type: none"> <li><span style="color: brown;">—</span> EXISTING OVERHEAD</li> <li><span style="color: brown;">- - -</span> EXISTING UNDERGROUND</li> <li><span style="color: purple;">—</span> PROPOSED OVERHEAD</li> <li><span style="color: purple;">- - -</span> PROPOSED UNDERGROUND DISTRIBUTION</li> </ul>	<ul style="list-style-type: none"> <li><span style="border: 1px dashed black; display: inline-block; width: 10px; height: 10px;"></span> EXISTING SUBSTATION (MT.)</li> <li><span style="border: 1px dashed red; display: inline-block; width: 10px; height: 10px;"></span> PROPOSED LASSEN SUBSTATION PARCEL</li> <li><span style="border: 1px solid blue; display: inline-block; width: 10px; height: 10px;"></span> PULLING AND TENSIONING</li> <li><span style="color: green;">—</span> LIMITS OF DELINEATED</li> </ul>	<ul style="list-style-type: none"> <li><span style="background-color: grey; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> EXISTING ACCESS</li> <li><span style="background-color: yellow; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> TEMPORARY ACCESS</li> <li><span style="background-color: lightgreen; border: 1px solid black; display: inline-block; width: 10px; height: 10px;"></span> ENVIRONMENTALLY SENSITIVE ACCESS ROAD (TEMPORARY)</li> </ul>
		<b>PACIFICORP LASSEN SUBSTATION PROJECT</b>	

Source: ArcGIS Imagery, 2010.

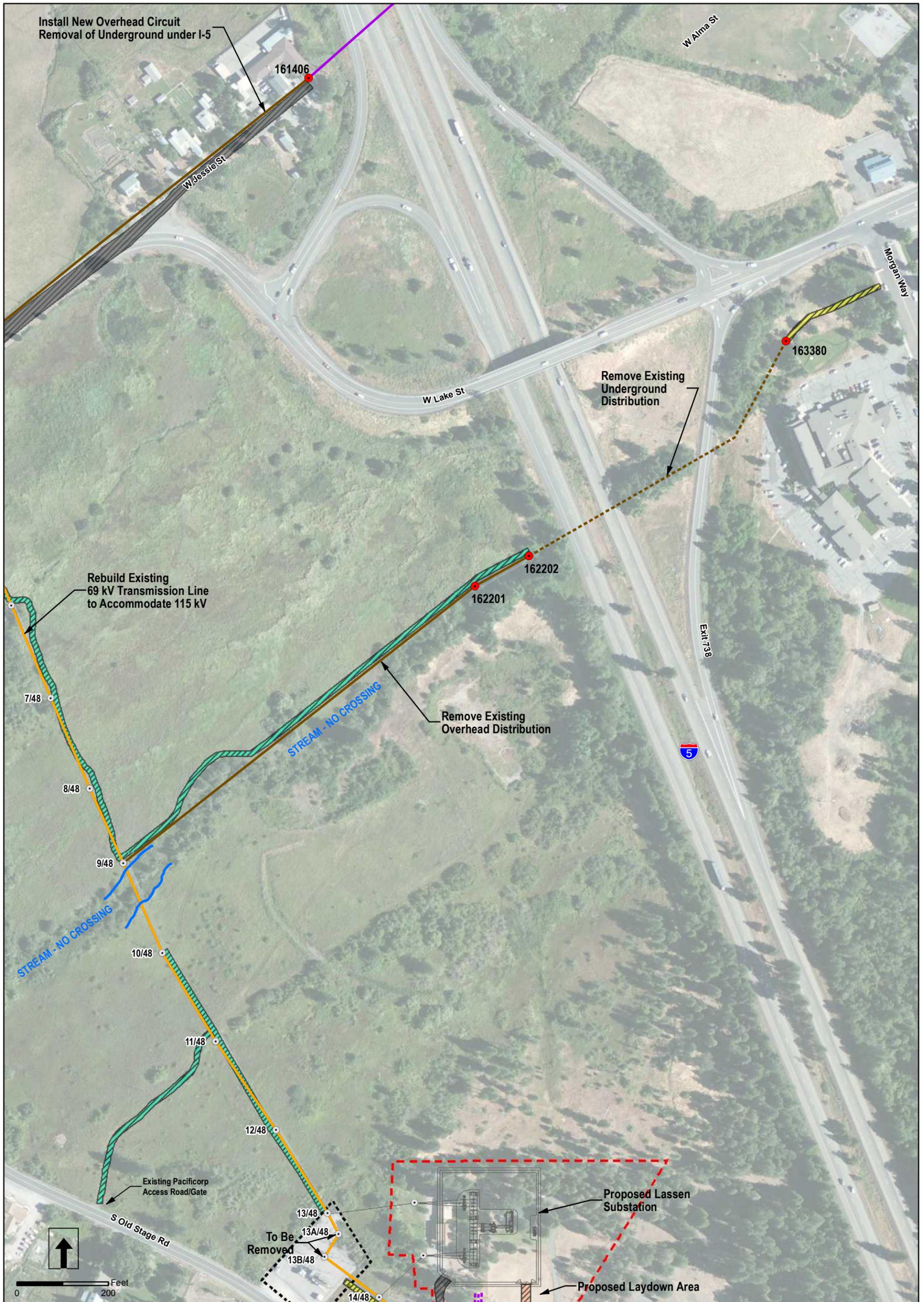
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<b>LEGEND</b> <ul style="list-style-type: none"> <li><span style="color: red;">●</span> DISTRIBUTION FEATURE</li> <li><span style="color: grey;">○</span> TRANSMISSION STRUCTURE</li> <li><span style="border-bottom: 1px solid orange; width: 20px; display: inline-block;"></span> EXISTING TRANSMISSION LINE TO BE REBUILT</li> <li><span style="border-bottom: 1px solid brown; width: 20px; display: inline-block;"></span> EXISTING OVERHEAD DISTRIBUTION</li> <li><span style="border-bottom: 1px dashed brown; width: 20px; display: inline-block;"></span> EXISTING UNDERGROUND DISTRIBUTION</li> <li><span style="border-bottom: 1px solid purple; width: 20px; display: inline-block;"></span> PROPOSED OVERHEAD DISTRIBUTION</li> <li><span style="border-bottom: 1px dashed purple; width: 20px; display: inline-block;"></span> PROPOSED UNDERGROUND DISTRIBUTION</li> <li><span style="border: 1px dashed black; width: 15px; height: 15px; display: inline-block;"></span> EXISTING SUBSTATION (MT. SHASTA)</li> <li><span style="border: 1px dashed red; width: 15px; height: 15px; display: inline-block;"></span> PROPOSED LASSEN SUBSTATION PARCEL</li> <li><span style="border: 1px solid blue; width: 15px; height: 15px; display: inline-block;"></span> PULLING AND TENSIONING</li> <li><span style="border: 1px solid green; width: 15px; height: 15px; display: inline-block;"></span> LIMITS OF DELINEATED WETLAND</li> <li><span style="background-color: grey; width: 15px; height: 15px; display: inline-block;"></span> EXISTING ACCESS</li> <li><span style="background-color: yellow; width: 15px; height: 15px; display: inline-block;"></span> TEMPORARY ACCESS</li> <li><span style="background-color: lightgreen; width: 15px; height: 15px; display: inline-block;"></span> ENVIRONMENTALLY SENSITIVE ACCESS ROAD (TEMPORARY)</li> </ul>		<b>FIGURE 3-5C PROJECT COMPONENTS</b>  <b>PACIFICORP LASSEN SUBSTATION PROJECT</b>
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Source: ArcGIS Imagery, 2010.

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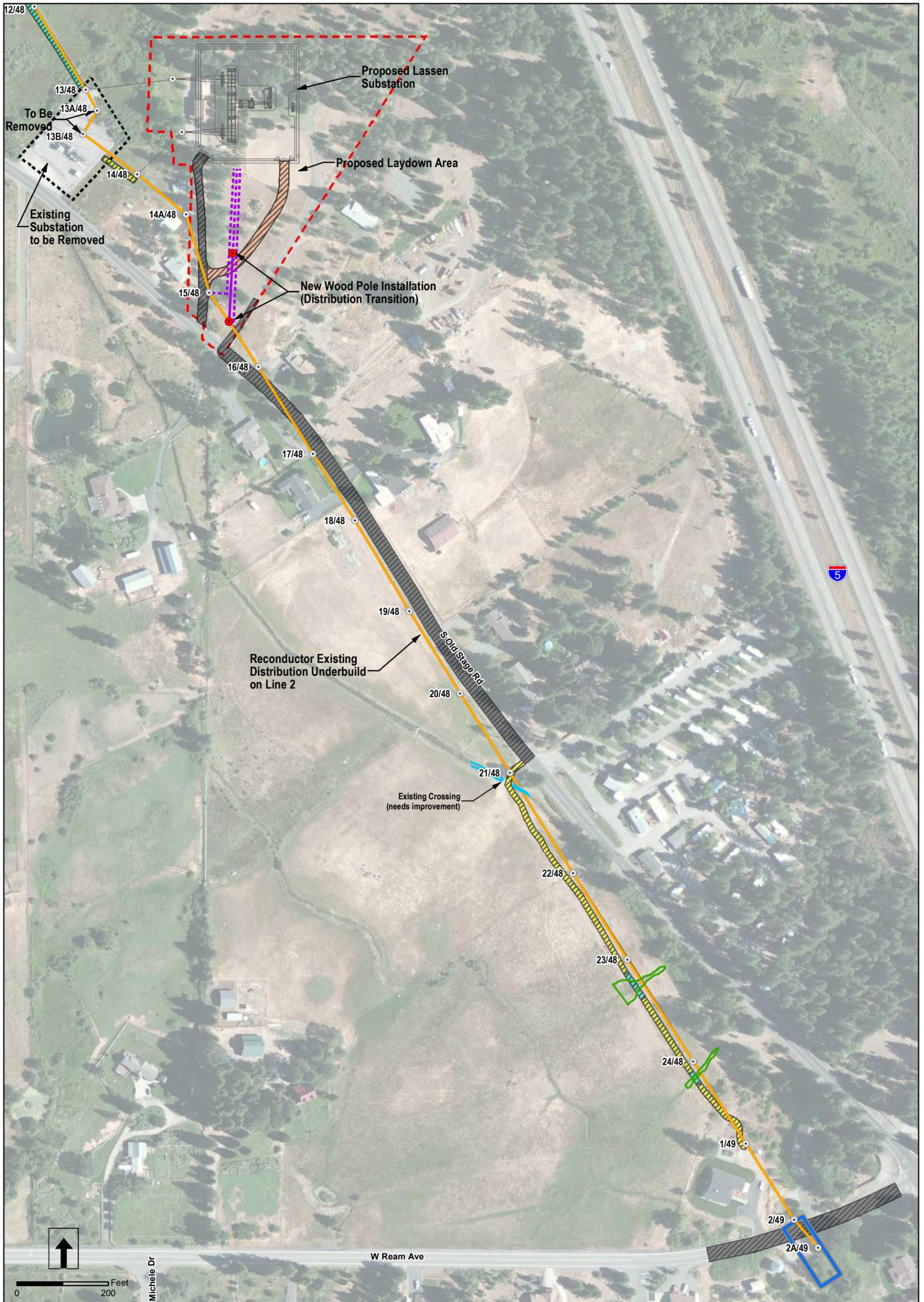
- |  |   |                                     |   |
|--|---|-------------------------------------|---|
| ● DISTRIBUTION FEATURE                     | — EXISTING OVERHEAD DISTRIBUTION        | ⊠ EXISTING SUBSTATION (MT. SHASTA)  | ▨ EXISTING ACCESS                                   |
| ○ TRANSMISSION STRUCTURE                   | - - - EXISTING UNDERGROUND DISTRIBUTION | ⊠ PROPOSED LASSEN SUBSTATION PARCEL | ▨ NEW ACCESS  |
| — EXISTING TRANSMISSION LINE TO BE REBUILT | — PROPOSED OVERHEAD DISTRIBUTION        | ▭ PULLING AND TENSIONING            | ▨ TEMPORARY ACCESS                                  |
|  | - - - PROPOSED UNDERGROUND DISTRIBUTION | — DELINEATED STREAM BANK            | ▨ ENVIRONMENTALLY SENSITIVE ACCESS ROAD (TEMPORARY) |

**FIGURE 3-5D  
PROJECT COMPONENTS**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

Source: ArcGIS Imagery, 2010.

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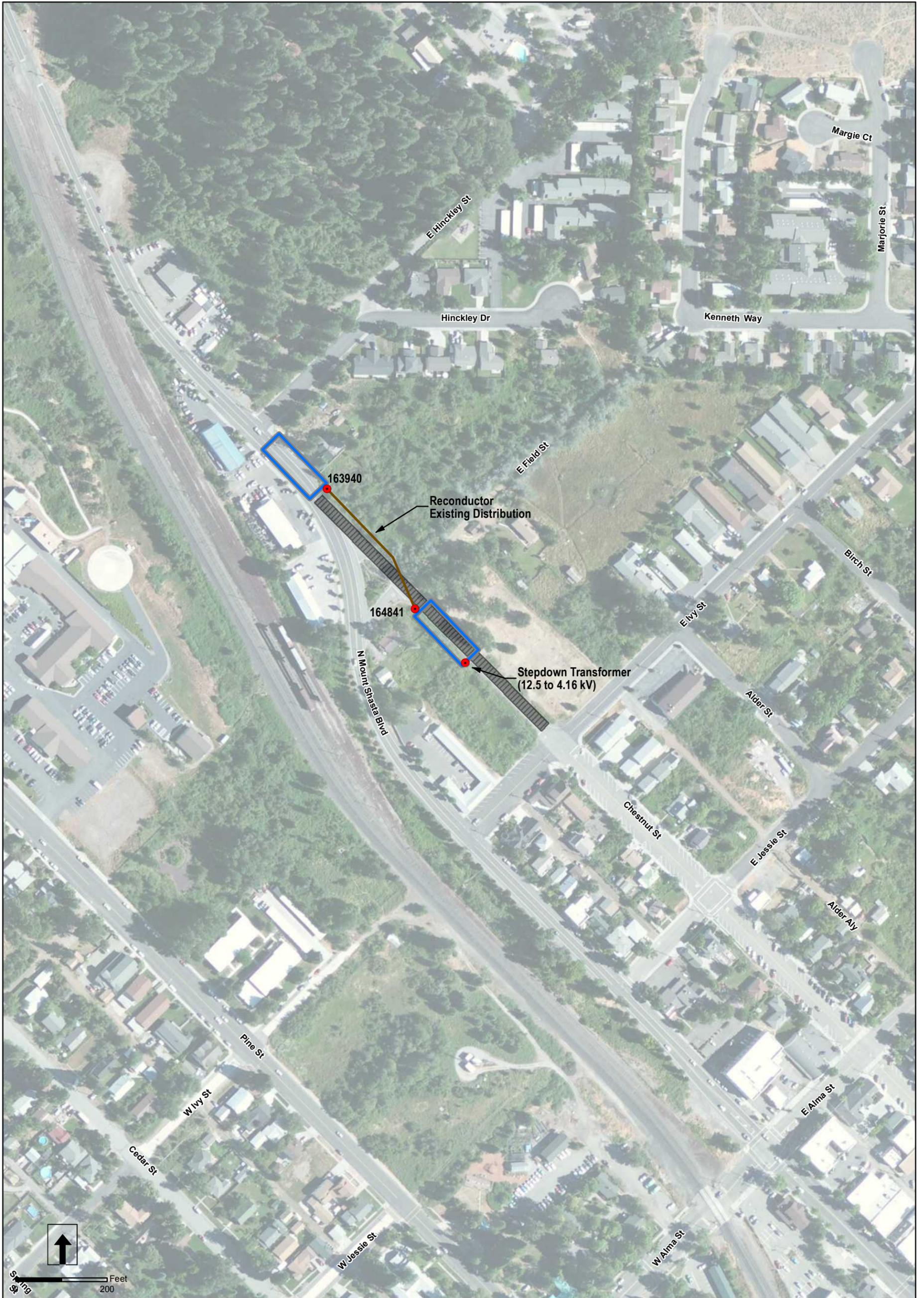
LEGEND			
●	DISTRIBUTION FEATURE	⊘	EXISTING SUBSTATION (MT. SHASTA)
○	TRANSMISSION STRUCTURE	⊘	PROPOSED LASSEN SUBSTATION PARCEL
—	EXISTING OVERHEAD DISTRIBUTION	⊘	PULLING AND TENSIONING
—	EXISTING UNDERGROUND DISTRIBUTION	—	LIMITS OF DELINEATED WETLAND
—	PROPOSED OVERHEAD DISTRIBUTION	—	ORDINARY HIGH WATER MARK (OHWM)
—	PROPOSED UNDERGROUND DISTRIBUTION	—	
▨	EXISTING ACCESS	▨	ENVIRONMENTALLY SENSITIVE ACCESS ROAD (TEMPORARY)
▨	NEW ACCESS		
▨	TEMPORARY ACCESS		

**FIGURE 3-5E  
PROJECT COMPONENTS**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

Source: ArcGIS Imagery, 2010.

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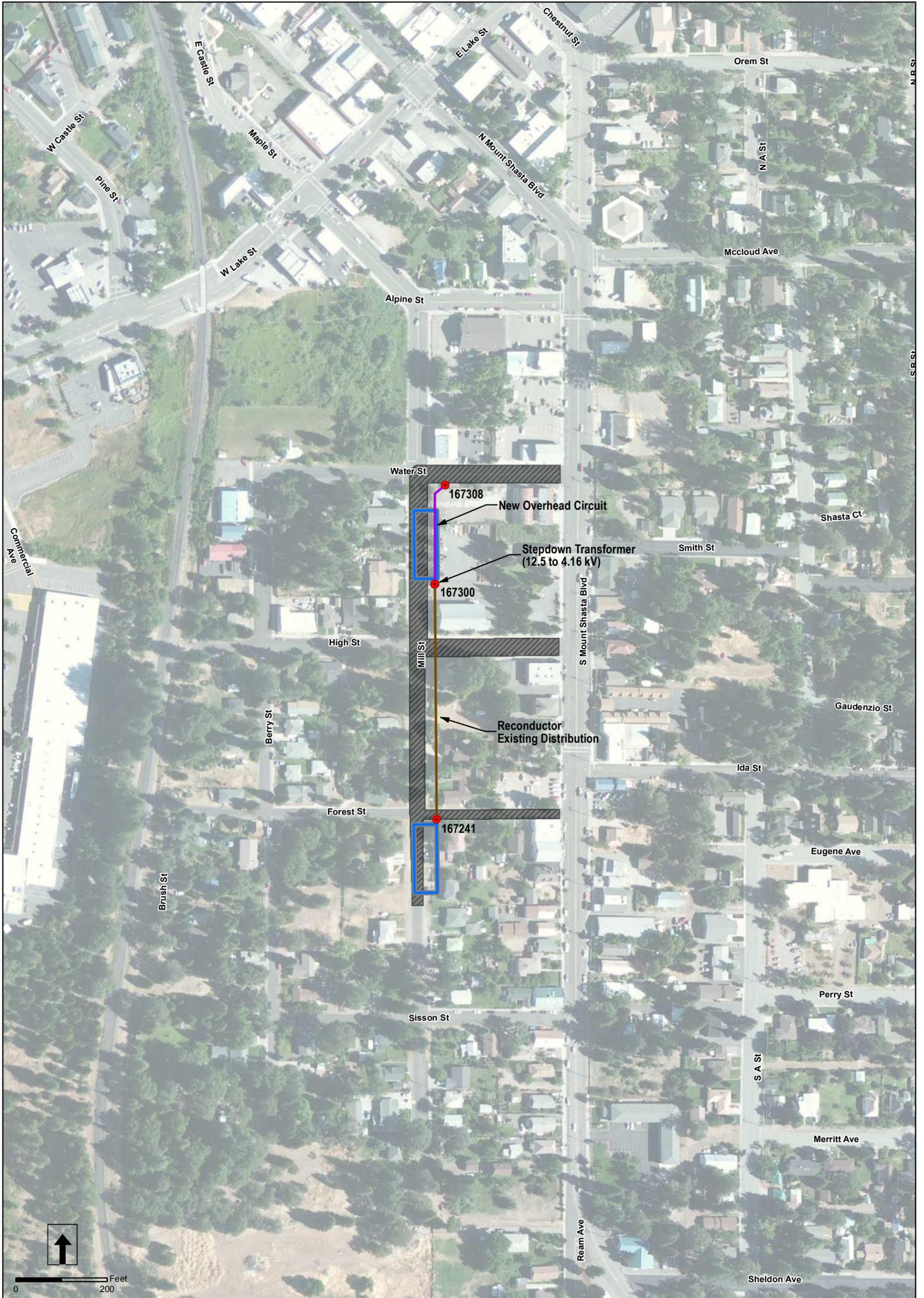
LEGEND			
<span style="color: red;">●</span>	DISTRIBUTION FEATURE		EXISTING SUBSTATION (MT. SHASTA)
<span style="color: grey;">○</span>	TRANSMISSION STRUCTURE		PROPOSED LASSEN SUBSTATION PARCEL
	EXISTING TRANSMISSION LINE TO BE REBUILT		PULLING AND TENSIONING
	EXISTING OVERHEAD DISTRIBUTION		EXISTING ACCESS
	EXISTING UNDERGROUND DISTRIBUTION		
	PROPOSED OVERHEAD DISTRIBUTION		
	PROPOSED UNDERGROUND DISTRIBUTION		

**FIGURE 3-5F  
PROJECT COMPONENTS**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

Source: ArcGIS Imagery, 2010.

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<b>LEGEND</b> <ul style="list-style-type: none"> <li><span style="color: red;">●</span> DISTRIBUTION FEATURE</li> <li><span style="color: orange;">○</span> TRANSMISSION STRUCTURE</li> <li><span style="color: yellow;">—</span> EXISTING TRANSMISSION LINE TO BE REBUILT</li> <li><span style="color: orange;">—</span> EXISTING OVERHEAD</li> <li><span style="color: orange;">- - -</span> EXISTING UNDERGROUND</li> <li><span style="color: purple;">—</span> PROPOSED OVERHEAD</li> <li><span style="color: purple;">- - -</span> PROPOSED UNDERGROUND DISTRIBUTION</li> <li><span style="border: 1px dashed black; border-radius: 50%; width: 10px; height: 10px; display: inline-block;"></span> EXISTING SUBSTATION (MT. PARCEL)</li> <li><span style="border: 2px dashed red; border-radius: 50%; width: 10px; height: 10px; display: inline-block;"></span> PROPOSED LASSEN SUBSTATION PARCEL</li> <li><span style="border: 2px solid blue; border-radius: 50%; width: 10px; height: 10px; display: inline-block;"></span> PULLING AND TENSIONING</li> <li><span style="background-color: gray; border: 1px solid black; width: 10px; height: 10px; display: inline-block;"></span> EXISTING ACCESS</li> </ul>		<b>FIGURE 3-5G PROJECT COMPONENTS</b>
		<b>PACIFICORP LASSEN SUBSTATION PROJECT</b>

Source: ArcGIS Imagery, 2010.

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The existing Class 2 and Class 3 wood poles from 19/47 to 2A/49 of Line 2 would be replaced with Class 1 wood poles, and existing and upgraded distribution underbuild equipment would be transferred to the new wood poles. The replacement poles would be placed immediately adjacent to the existing poles, and the old poles would be cut off at ground level. The replacement poles would be direct-buried into the ground and would not require a concrete foundation. Replacement of the poles would occur within the existing right-of-way (ROW).

Three new transmission poles would be constructed to connect the transmission lines from the existing Mt. Shasta Substation to the proposed Lassen Substation. The proposed poles would also be single-circuit guyed wood poles (GWPs). The GWPs would have an average height range between 80 and 90 feet, depending on the conditions of the surrounding terrain, with an average pole-to-pole span of 120 to 300 feet. The GWPs would be approximately 19 inches in diameter. Although exact structure placement would be determined during engineering surveys and detailed design studies for the preferred site, the proposed location for these three new poles is shown on Figure 3-2, Project Overview.

### **3.4.1 Above-ground Transmission Conductor/Cable**

Conductor (or “wires”) selection requires a number of considerations including power requirements, future capacity, terrain, weather conditions, environmental factors, and analysis of required electrical, physical, and mechanical properties. Modern electrical transmission conductors typically consist of multiple strands of aluminum and steel, with aluminum carrying the most of the electrical current. Strength of conductors is a function of the amount of steel incorporated measured as a percent of the conductor’s cross-sectional area. The amount of steel in conductors is selected to provide a balance between strength and conductivity. The conductor being considered for the new single-circuit 115 kV transmission line is a 795 kcmil ACSR. Six conductors would be installed on each pole.

Minimum conductor height above the ground, under normal operation of the line, is 31 feet, as required by CPUC GO-95; greater clearances may be required in certain areas. Minimum conductor clearance would dictate the exact height of each pole based on topography and safety clearance requirements. Minimum conductor clearances in some instances may be greater based on specific National Electric Safety Code (NESC) requirements.

Insulators are used to provide the physical connection of conductors to structures. These system components are made of very low conducting materials (polymer insulators) that inhibit the flow of electric current from energized conductors to ground or to other energized system elements. Insulators and their associated hardware are to be configured in an “I” assembly to support conductors while maintaining required distances between phases and grounded structures. Each “I” string would consist of six-inch diameter insulators between six and eight feet long.

### **3.4.2 Underground Distribution Conductor/Cable**

Three runs of 1,000 kCM Al distribution cable with Ethylene Propylene Rubber (EPR) insulation would be required to connect the Lassen Substation with three 12.5 kV distribution circuits. The cable runs would be installed underground approximately 300 feet from the cable pulling vault outside of the proposed Lassen Substation south with one run to a new wood transmission pole that would be located approximately 30 feet north of South Old Stage Road, between existing Poles 15/48 and 16/48, another run to transmission pole 15/48 and the third run to a new distribution pole. The new transmission pole would carry one double-circuit underbuild (12.5 kV distribution line) to the northwest and one single-circuit distribution underbuild to the southeast.

The underground line would be placed in an open-cut trench four feet wide and six feet deep. The conductor would be contained within conduits or pipes, which are placed on conduit or pipe supports set at intervals along the trench. Because heat is produced in the process of power flow through underground conductor systems, the trench would be backfilled with a special heat-dissipating material to allow proper functioning of the underground system. Due to the relatively short span of the underground line, manholes and vaults would not be required.

### 3.4.3 Replace/Rebuild Existing Distribution Lines

The proposed Lassen Substation would consist of three 12.47 kV distribution circuits sourced from the underground cables described in Section 3.5.4 above.

The existing 12.47 kV circuit to the south of the Mt. Shasta Substation (existing Pioneer Creek Feeder) would consist of the following improvements:

- Replace #1/0 copper (Cu) phase conductors and #4 Cu neutral conductor with 477 kilo circular mil (kcmil) all aluminum conductor (AAC) phase conductors and #4/0 AAC neutral conductor approximately 2,400 feet from Pole 16/48 just outside the proposed Lassen Substation to Pole 2/49 located at Ream Avenue along South Old Stage Road.
- Extend #2 ACSR 12.47 kV third phase approximately 500 feet from Pole 06240004.0-167241 located at Forest Street to Pole 06240004.0-167300 located north of High Street along Mill Street.
- Build a 1,500 kVA 12.47 kV to 4.16 kV transformer bank at Pole 06240004.0-167300 located on Mill Street north of High Street.
- Extend 4.16 kV #4/0 AAC phase and neutral conductors approximately 300 feet from Pole 06240004.0-167300 to Pole 06240004.0-167308 located at Water Street along Mill Street and connect to the existing 4.16 kV circuit.

The existing 12.47 circuit located north of Mt. Shasta Substation (existing Black Butte Feeder) would consist of the following improvements:

- Replace #1/0 Cu phase conductors and #4 Cu neutral conductor with 477 kcmil AAC phase conductors and #4/0 AAC neutral conductor approximately 500 feet from Pole 15/48 located at the proposed Lassen Substation to Pole 13/48 at Mt. Shasta Substation. Connect the new distribution conductor to the existing 556 kcmil AAC conductor.
- Convert 4.16 kV distribution to 12.47 kV from Pole 06240004.0-160304 located on Lake Street east of Old Stage Road to Pole 06240004.0-161406 located on Jessie Street and west of I-5.
- Install #4/0 AAC phase and neutral conductors across I-5 located at Jessie Street from Pole 06240004.0-161406 to Pole 06240004.0-162400. Remove existing I-5 underground cable crossing from Caltrans culverts located at Lassen Lane.
- Build a 1,500 kVA 12.47 kV to 4.16 kV transformer bank at Pole 06240004.0-162400 located on Jessie Street and the east side of I-5.

The third 12.47 kV distribution circuit would be a new feeder running north from the proposed Lassen Substation and would consist of the following improvements:

- Extend 477 kcmil AAC phase conductors approximately 4,300 feet from Pole 15/48 located at Lassen Substation to Pole 19/47. Move the tap to the east from the existing Black Butte Feeder to the new feeder.

- Replace 336 kcmil ACSR phase conductors with 477 kcmil AAC conductors approximately 1,700 feet from Pole 19/47 to Pole 06240004.0-160901 near the intersection of Lassen Lane and I-5.
- Remove the de-energized I-5 underground cable crossing at Lassen Lane from Caltrans culverts.
- Install 1,000 kcmil Al underground cable from Pole 06240004.0-161981 located on Kingston Road approximately 1,200 feet to a new riser pole near Pole 06240004.0-091000. Replace the Type 9 switchgear at 161981 with Type 11 switchgear. Configure existing #4/0 Al underground cable to serve local load.
- Extend #2 AAAC phase and neutral conductors approximately 300 feet from Pole 06240004.0-163940 located on Mt. Shasta Boulevard to Pole 06240004.0-164841 located on Chestnut Street.
- Build a 1,500 kVA 12.47 kV to 4.16 kV transformer bank at Pole 06240004.0-164841 on Chestnut Street.

Construction of the proposed Lassen Substation would result in idle former 4.16 kV conductors; therefore, the following removals would be required:

- Remove two 4.16 kV circuits 900 feet from Pole 13B/48 located at the Mount Shasta Substation to Pole 9/48 and one 4.16 kV circuit 1,000 feet from Pole 9/48 to Pole 06240004.0-160304 located on Lake Street. The 4.16 kV circuit removals in these line sections would make space available for the new feeder from the proposed Lassen Substation.
- Remove the 4.16 kV circuit approximately 1,200 feet from Pole 9/48 to Pole 06240004.0-163380 located west of I-5.
- Remove the underground cable at the I-5 crossing from Pole 06240004.0-163380 to Pole 06240004.0-163380 from the Caltrans culverts at Lassen Lane.

### **3.4.4 Mt. Shasta Substation Removal**

Once the Lassen Substation has been constructed and is operational, the above-ground equipment within the existing Mt. Shasta Substation would be removed. Prior to removal of the existing substation, the soil, conduit, equipment, and steel structures would be tested for environmental hazards, such as oil, lead based paint, and asbestos. All hazardous materials would be abated in accordance with applicable federal, State, and local regulations prior to, or as part of, the removal process. Removal would include disconnection and removing all of the equipment including the transformer, breakers, regulators, disconnects switches, fuses, the station light and power transformer, and control cabinets. Oil-filled equipment, such as transformers, would be transported to PacifiCorp's Service Center in Medford, Oregon for storage. Other equipment and waste materials would be disposed of according to State and federal regulations. The existing Mt. Shasta Substation concrete foundation and gravel would remain after removal of the substation. All below-grade facilities would remain in place. The existing transmission and distribution taps would be routed to the new Lassen Substation, as described previously.

## **3.5 Right-of-Way Requirements**

The site of the existing Mt. Shasta Substation is owned by PacifiCorp and is located on an approximate 130 feet by 130 feet parcel (0.4 acre). Additional property has been acquired by PacifiCorp for the proposed Lassen Substation site to accommodate the new structure. Additional transmission line ROW of 50 feet by 300 feet would be required for the transmission line and poles

that would enter into the new Lassen Substation. Perpetual easements would be negotiated from private landowners for new transmission lines.

PacifiCorp design standards require a ROW that is 50 feet wide for a 115 kV transmission line. The existing ROW for the 69 kV transmission line and the transmission loop varies from 50 feet to 75 feet wide; therefore, the new 115 kV line would not require new easements for the pole upgrade portion of the Project.

## **3.6 Construction**

Construction of the Project is expected to begin in the winter of 2016 and take approximately six to 12 months to complete. PacifiCorp would not initiate construction of the Project until after issuance of the PTC from the CPUC. PacifiCorp would conduct all activities associated with the construction and operation of the substation and transmission and distribution lines within the authorized limits of the ROW and in strict conformity with APMs identified to reduce potential impacts of the Project.

### **Construction Sequence**

The construction of the substation and the above- and underground transmission/distribution lines upgrades would be performed concurrently and would take approximately six to 12 months. The general construction sequence of events are as follows: 1) construction of the new Lassen Substation: clearing and grading of access roads, site grading and drainage development, installation of concrete foundations for steel support structures, installation of below- and above-ground electrical conduits for equipment power and control, installation of below- and above-grade grounding conductors, and installation of control and relay houses; 2) above-ground transmission line construction: surveying the centerline, upgrading existing permanent access roads; clearing ROW, installing foundations, assembling and erecting the poles and removal of existing poles from Poles 19/47 to 2A/49, clearing pulling, tensioning, and splicing sites, string conductors; 3) underground transmission line construction: ROW clearing, trenching, duct bank installation, cable installation, backfilling; 4) Reconductor existing distribution lines; and 5) Mt. Shasta Substation removal and site restoration.

### **3.6.1 All Project Components**

#### **Staging Area**

One construction yard/staging area, roughly 100 by 100 feet in size (0.23 acre), would be required for materials and equipment storage and staging for construction activities. The proposed location for the staging area is adjacent to the proposed Lassen Substation, on property owned by PacifiCorp. The yard would serve as a field office, reporting location for workers, parking space for vehicles and equipment, a site for material storage, a station for equipment maintenance, and a site for temporary marshalling of construction materials. Facilities would be fenced and their gates locked. Temporary power to the site would be provided by the construction contractor utilizing existing on-site distribution power.

#### **Work Areas**

Work areas would be required at each pole site to facilitate the safe operation of equipment and construction operations. The size of the work area would be driven by the need to lay down the poles and install the necessary hardware and frame them to full length. Within these work areas, the permanent disturbance area associated with each pole would be 18 inches in diameter or 1.77 square feet. The work area outside of the permanent disturbance area would be cleared of vegetation only to the extent necessary to allow for equipment to maneuver. Work areas would be accessed by walk-in and construction vehicles.

Temporary disturbance for tangent structure work areas would be 5,000 square feet (100 feet by 50 feet). Temporary disturbance for angle/dead end structure work areas would be 5,400 square feet (100 feet by 50 feet plus 20 feet by 20 feet for guy wires).

Grading would occur where the topography is too uneven to allow safe operation of equipment. After line construction is complete, all work areas would be restored as described below under Cleanup and Post-Construction Restoration.

Set-up sites for in-line pulling and tensioning would be necessary along the 200-foot transmission loop as well as along the area of pole replacement and along the distribution line upgrade areas. Pulling and tensioning sites for stringing the conductor would result in a temporary disturbance area of approximately 50 by 150 feet with an estimated 10 sites required for the entire transmission line (i.e., the new loop and pole replacement area). Although not expected, setup sites for corners and heavy angles could be the width of the ROW and up to 250 feet in length on both sides of the ROW to allow for equipment to be set up in line with the pulling of the conductor. Where feasible, areas would be selected to allow access of equipment from existing roads and trails.

### **Access Roads**

#### *Substation*

New access roads would not be necessary for construction of the proposed Lassen Substation; however, the existing access road (currently a residential driveway) to the new substation property (refer to Figure 3-4) would require widening and upgrading to allow for safe construction and maintenance access during operation. This existing access road is approximately 500 feet in length and approximately 10 feet wide. The existing access road would be upgraded to support the weight of construction vehicles and would be expanded to a width of 16 feet, consisting of a 12- to 14-foot driving surface with a side drainage system between one and two feet wide.

#### *Transmission Line*

It is anticipated that access to the existing transmission line and poles would occur on existing access roads in the Project vicinity. These access roads would not be bladed, disturbed, or otherwise modified except for the compaction or removal of vegetation for the safe movement of, equipment and construction vehicles. The following describes the existing roads that would most likely be utilized during construction and operation and maintenance activities (refer to Figures 3-5A through 3-5G and Table 3-1).

The ROW from Poles 19/47 through 22/47 would be accessed from existing access roads, e.g., the existing access road on the east side of Old Stage Road approximately 400 feet northwest of Hatchery Lane. Existing roads with access to these poles are thickly vegetated with pine trees, and would require selective trimming of branches to allow for safe passage of construction equipment.

The ROW from Poles 23/47 through 9/48 would be accessed from Hatchery Lane. Many of these poles are in wetlands with standing water, and alternative access methods (e.g., portable road platforms, or other temporary wetland access methods) would be utilized to provide access and reduce impacts to the wetlands. Poles 10/48 through 13/48 would be accessed via an existing access road near the intersection of South Old Stage Road and West A Barr Road. This road is associated with an existing distribution line belonging to PacifiCorp, and would require some vegetation clearing. Poles 14/48, 14A/48, and 15/48 would be accessed from the proposed substation site.

Poles 16/48 through 20/48 would be accessed directly from South Old Stage Road; during replacement of these poles, the southbound lane of South Old Stage Road would be closed for public

safety. Poles 21/48 through 24/48 would be accessed from South Old Stage Road via an existing access road, which would also be used for substation construction activities, beneath the transmission line. Pole 1/49 would be accessed from the private property in which it is situated, and Poles 2/49 and 2A/49 would be accessed directly from West Ream Avenue. The lane nearest the pole to be replaced would be closed during construction for public safety. A Traffic Management Plan would be prepared prior to construction.

Dependent upon final design, some temporary access roads may be constructed as part of the Project. These would typically be 12 feet wide and may require improved ditch drainage systems where Waters of the United States (U.S.) are crossed. In areas where wetlands are unavoidable, driving mats, portable road platforms (e.g., 8-foot by 14-foot high-density polyethylene mats, or “geomats”, portable road platforms) or similar methods would be used to avoid permanent disturbance to wetland soils and vegetation. Most temporary roads would be constructed by crushing vegetation. In some areas, material and topsoil from the temporary roads may be bladed to one or both sides to facilitate rehabilitation. Following construction, bladed material and topsoil would be re-spread across the disturbed road section.

Access road improvements would include dust-control and erosion control measures in or near sensitive areas. See below for more detailed information about erosion control measures. All existing roads would be left in a condition equal to or better than their condition prior to the construction of the transmission line. Gates would be installed where required at fenced property lines to restrict general vehicular access from or to the ROW.

#### *Distribution Line*

Access to the existing distribution line(s) and poles would either occur on existing access roads in the Project vicinity or as described in the transmission line section where the distribution line attaches to the transmission poles. The access roads would not be bladed, disturbed, or otherwise modified except for the compaction or removal of vegetation for the safe movement of equipment and construction vehicles. Table 3-1 describes the existing roads that would most likely be utilized during construction and operation and maintenance activities (refer to Figure 3-5A through 3-5G).

- Mill Street from High Street to Water Street
- Lake Street east of Old Stage Road to Jessie Street on the west side of I-5
- Jessie Street on the east side of Interstate 5
- Mount Shasta Boulevard and Hinckley Avenue to Chestnut Street and Ivy Street

Additional distribution lines without existing road access are:

- Transmission Pole 19/47 to distribution pole on the west side of I-5 south of Lassen Lane
- Transmission Pole 9/48 to distribution cabinet on the west side of I-5 south of Lake Street
- New distribution underground line off Kingston Road

**TABLE 3-1                      SUMMARY OF ACCESS ROAD REQUIREMENTS**

TYPE OF ROAD	DESCRIPTION	TEMPORARY IMPACTS	PERMANENT IMPACTS
Temporary Access Roads	12-foot-wide access road for temporary overland construction-related activities; these roads would not be required for operation of proposed Project. These roads would be rehabilitated to existing conditions following construction.	0.479 acres	--
Environmentally Sensitive Areas	Temporary overland access roads. Use of geomats, temporary wood construction pads, portable road platforms, or other methods, as determined during final engineering.	1.375	--
Existing Road to Lassen Substation	Existing road that requires upgrades to be utilized for construction, operation and maintenance of the proposed Project.	--	0.153 acre
New Roads	12-foot-wide access road for operation and maintenance of the Lassen Substation.	--	0.154

**Vegetation Clearance**

Clearing of some natural vegetation may be required to install the transmission pole structures and for construction of the new substation. However, selective clearing would be performed only when necessary to provide for surveying, electrical safety clearances, line reliability, and maintenance. Tree removal and trimming would be conducted in accordance with CPUC GO-95, Rule 35. Along some access roads, trees may need to be trimmed to provide clearance for vehicles. PacifiCorp would coordinate with landowners should tree trimming or removal on private property be required. Tree trimming and removal would be avoided where feasible.

In areas where wetlands are unavoidable, geomats, temporary wood construction pads, portable road platforms, or other methods, as determined during final engineering, would be used to avoid permanent disturbance to wetland soils and vegetation.

Upon Project completion, all temporarily disturbed areas would be re-seeded using a certified weed-free native seed mix and best management practices (BMPs) for erosion control.

**Erosion and Sediment Control and Pollution Prevention During Construction**

Erosion and sediment controls may be necessary to prevent soil erosion in construction areas located upslope of wetlands or other sensitive areas where a leveled trail to access a structure location or a leveled area is required to allow equipment set-up for pole installation. An erosion and sediment control plan would be developed prior to construction and included as part of the required Stormwater Pollution Prevention Plan (SWPPP). The goal of the SWPPP would be to remove sediment and wastes from runoff before the runoff is discharged from the Project site. This would be accomplished by:

- Minimizing the acreage of disturbed and exposed soil during the construction phase and implementing stabilization measures where necessary.
- Removing sediment from runoff before it leaves the site.
- Complying with specific erosion and sediment control measures specified within the erosion and sediment control plan.

Applying and maintaining standard erosion and sedimentation control methods would minimize erosion and water quality impacts. These methods may include preservation of existing vegetation or use of geomats, straw wattles, straw bale barriers or silt fencing, which would be placed at construction boundaries. Gravel ramps may be installed at access points to public roadways to prevent or minimize the tracking of mud, dirt, sediment, or similar materials onto the roadway. Selection of appropriate erosion control materials would be based on soil properties, steepness of the slope, and anticipated surface flow or runoff.

Diesel fuel, gasoline, oil, and other lubricants, as well as adhesives and sealants, would be utilized during the construction of the transmission line and substation. Bulk quantities may be stored in the designated construction yard/staging area. Vehicle fueling and maintenance activities would be restricted to staging areas or approved areas away from drainage channels and sensitive habitats. All construction vehicles would be monitored for leaks and receive regular off-site preventive maintenance to reduce the chance of leakage.

### **Cleanup and Post-Construction Restoration**

Construction sites, material storage yards, and access roads would be kept in an orderly condition throughout the construction period. Refuse and trash would be removed from the sites and disposed in an approved manner. Oils and fuels would not be dumped along the line. Oils or chemicals would be hauled to an approved site for disposal. No open burning of construction trash would occur.

All forms of refuse and waste produced along the ROW during construction would be collected and disposed of in a designated landfill or appropriate waste disposal site. Refuse and waste is defined as any discarded material, trash, garbage, packing material, containers, waste petroleum products, broken equipment, used parts, excess construction materials.

Disturbed areas within the ROW would be graded and reseeded as required by the property owner. The natural drainage pattern along the ROW would be restored as near as possible to the original pattern. The reclamation would involve the personnel and equipment as shown in Tables 3-4 and 3-5.

Work sites would be restored using excess materials, vegetation, and topsoil stockpiled for that purpose. The contractor would dispose of excess soil materials, rock, and other surplus or objectionable materials that could not be used in restoration work.

Temporarily disturbed areas would be restored, as nearly as possible, to their original contour and reseeded where appropriate. Ripping and other surface scarification on construction roads or other areas would be done as necessary. In some cases, the amount of soil compaction and vegetation destruction may not warrant ripping and reclamation. This would be decided by the environmental monitor on a case-by-case basis.

### **3.6.2 Substation Construction**

Construction of the new substation would consist of preconstruction surveys, clearing and grading of the existing access road, site grading and drainage development, installation of concrete foundations and steel support structures, installation of below- and above-ground electrical conduits for equipment power and control, installation of below- and above-grade grounding conductors, and installation of control and relay houses. Equipment required for station construction would include graders and excavators, backhoes, drill rigs, concrete trucks, water trucks, trucks and flatbed trailers. Cranes, man-lifts, portable welding units, line trucks and mechanic trucks would also be required. Construction would take an estimated six to 12 months and require approximately 43 workers.

The site would be graded to maintain current drainage patterns as much as possible. Approximately 62,500 cubic yards of material would be removed from the site during site grading and foundation excavation, and disposed of as required by State and federal regulations. An approximately 12- to 14-foot-wide paved road and 100 foot by 100 foot gravel parking area would be required for worker access and parking. The yard would be covered with crushed-rock aggregate. Native vegetation would be re-established where possible outside the perimeter fence.

Following site grading and development, reinforced concrete foundations would be installed to support the steel structures and electrical equipment and control facilities. It is estimated that approximately 1,500 cubic yards of concrete would need to be delivered to the substation site for the foundations. Foundation work would require approximately 15 trips to the site by 40-ton, 10-yard capacity concrete trucks over an approximate 30-day working period. Subsequent to the foundation installation, trenches would be dug to facilitate placement of copper conductors for the station grounding mat.

### **3.6.3 Above-ground Transmission Line Construction**

Construction of the transmission lines described in Sections 3.5.2 and 3.5.3 (Replacement Poles and New Poles adjacent to Lassen Substation) would involve installation of a single-circuit, 115 kV 795 kcmil ACSR transmission line to carry Line 2 into and out of the proposed new Lassen Substation. Construction activities are described below (refer to Figure 3-6, Typical 115kV structure).

#### **Surveying**

Construction survey work for the proposed Project would begin with PacifiCorp negotiating any necessary rights-of-entry with local landowners in order to conduct any necessary surveys. Once survey permission is obtained, construction survey work would consist of determining centerline location, specific pole locations, ROW boundaries, work area boundaries and, in some areas, access roads to work areas. Preliminary pole, access road, and set-up site locations have been identified in the preliminary design plans.

#### **Pulling and Tensioning Sites**

The tensioning and pulling sites are shown on Figures 3-5A through 3-5G would result in temporary disturbance areas approximately 50 feet by 250 feet within an estimated 10 sites required for the transmission and distribution upgrades. To the greatest extent practical, pulling and tensioning sites would be located within the existing transmission ROW. Depending on topography, some grading may be required at pulling and tensioning sites to create level pads for equipment. Tensioners, line trucks, wire trailers, and tractors needed for stringing and anchoring the ground wire or conductor would be located at the tensioning sites. A puller, line trucks, and tractors needed for pulling and temporarily anchoring the counterpoise/ground wire and conductor would be located at the pulling sites. The tensioner, in concert with the puller, would maintain tension on the ground wire or conductor while they are fastened to the towers.

#### **Pole Installation and Removal**

Construction crews and their equipment would access the pole locations as described above under "Access Roads". Approximately two vehicles, making 15 trips, would be required for the removal of the existing wood poles.

**Pole and Foundation Installation**

The proposed Project would involve the installation of three new poles for the construction of the new transmission loop and 36 new poles in a one-for-one replacement of Poles 19/47 through 2A/49 of Line 2, a length of approximately 1.5 miles.

Excavations for installation of the poles would be made with power auger equipment. Where the soil permits, a vehicle-mounted power auger would be used. Excavation and pole installation would require access to each pole location by a power auger or drill, a crane, and material trucks. Holes would be excavated to approximately 11.5 feet deep and would be approximately 2.5 feet in diameter. Approximately 321 cubic yards of soil would be excavated from each hole. Foundations would consist of approximately 205 cubic yards of crushed rock and soil backfill per pole.

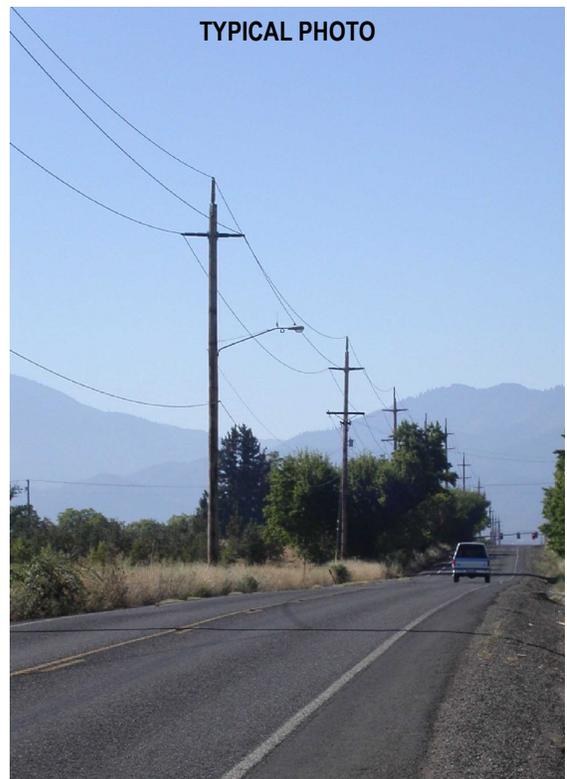
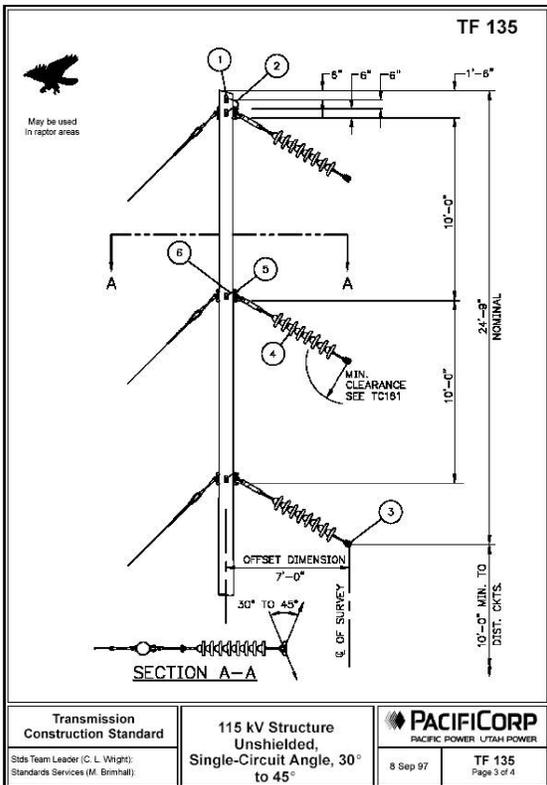
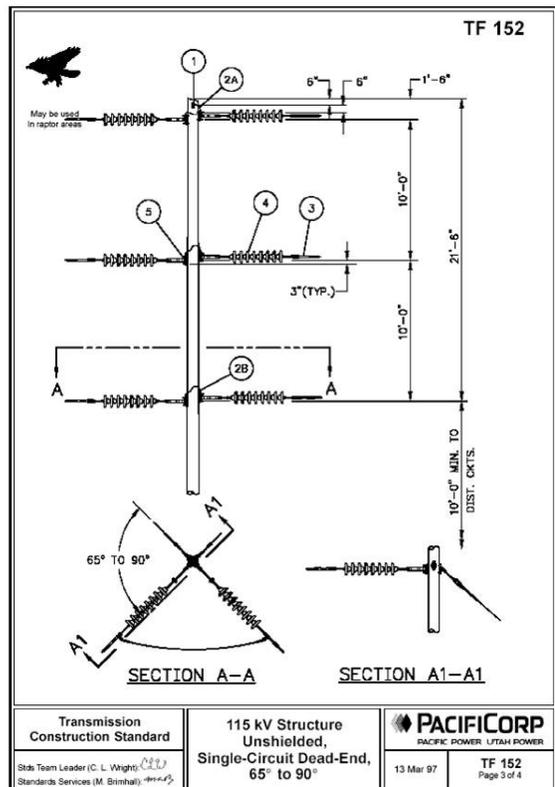
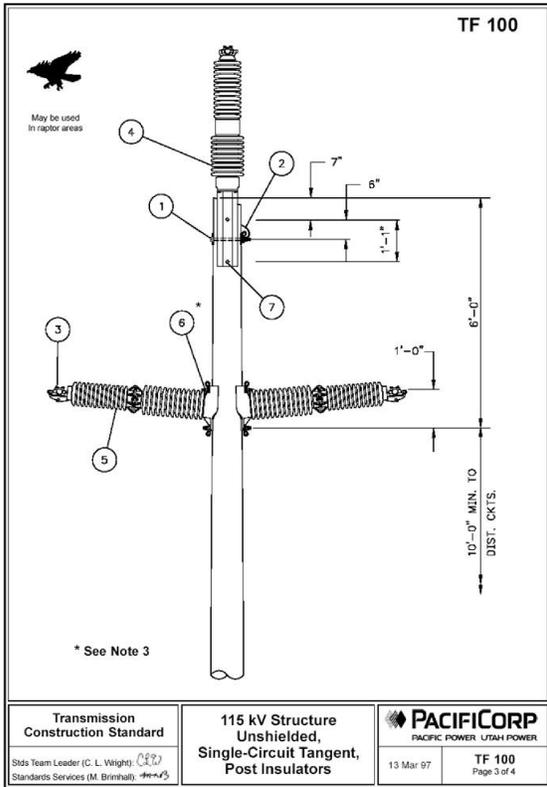
The wood poles and associated hardware would be delivered to each pole site by truck. As noted above, work areas must be large enough to accommodate laying down a pole while insulators are mounted to it. Insulator strings and stringing sheaves would be installed at each ground wire and conductor position while the pole is on the ground. Stringing sheaves would be used to guide the conductor during the stringing process for attachment onto the insulator strings. The assembled pole would then be hoisted into place by a crane or line truck. Figure 3-7 depicts the typical pole construction sequence and Table 3-2 provides a summary of the temporary and permanent typical pole/tower installation impacts.

**TABLE 3-2            SUMMARY OF TYPICAL POLE/TOWER INSTALLATION IMPACTS**

WOOD POLE STRUCTURE INSTALLATION	TEMPORARY IMPACTS	PERMANENT IMPACTS
Permanent Footprint per Pole (39 poles) Pole Diameter 19 inches Auger Hole Depth 10 to 11.5 feet	--	76.789 square feet
Average Work Area Around Pole (for pole removal and installation)	2,500 square feet	--
Total Permanent Footprint for Poles	--	0.002 acres
Pulling/Tensioning Areas	2.066 acres	--

**Pole and Foundation Removal**

Poles would be removed by a line crew that would access each pole site with a line truck. Poles would be loosened by hydraulic jack, and then removed from their holes using a line truck, digger/derrick, or truck-mounted crane. If the hole would not be reused, the top 12 inches would be backfilled with soil removed from Project-related construction activities within the immediate area. The surface would be restored with vegetation removed from the adjacent new pole hole or seeded with an appropriate (i.e., weed-free native) seed mix.



**FIGURE 3-6  
TYPICAL 115 kV  
STRUCTURE**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

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## **Conductor Installation**

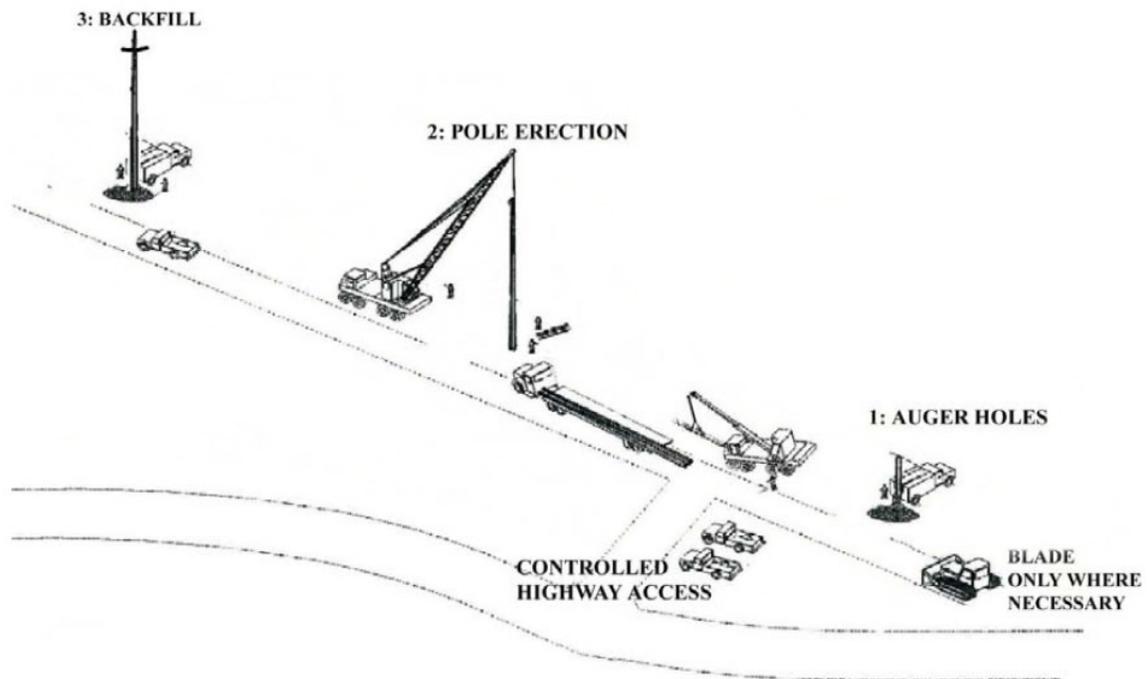
Once poles are in place, insulators, hardware, and stringing sheaves would be delivered to each pole site. The poles would be rigged with insulator strings and stringing sheaves at each ground wire and conductor position. For public protection during wire installation, guard structures may be erected over roadways, other existing power lines, structures, and other obstacles as necessary. Guard structures would consist of H-frame poles placed on either side of an obstacle. These structures prevent ground wire, conductor, or equipment from falling on an obstacle. Equipment for erecting guard structures includes augers, line trucks, pole trailers, and cranes. Guard structures may not be required for small roads. In such cases, other safety measures, such as barriers, flagmen, or other traffic controls, would be used.

A pilot line would be pulled from pole to pole and threaded through the stringing sheaves on each pole. A larger diameter, stronger line would then be attached to the pilot line and strung. This is called the pulling line. This process would be repeated until the ground wire and conductor is pulled through all sheaves (see Figure 3-8, Typical Conductor Stringing Activities).

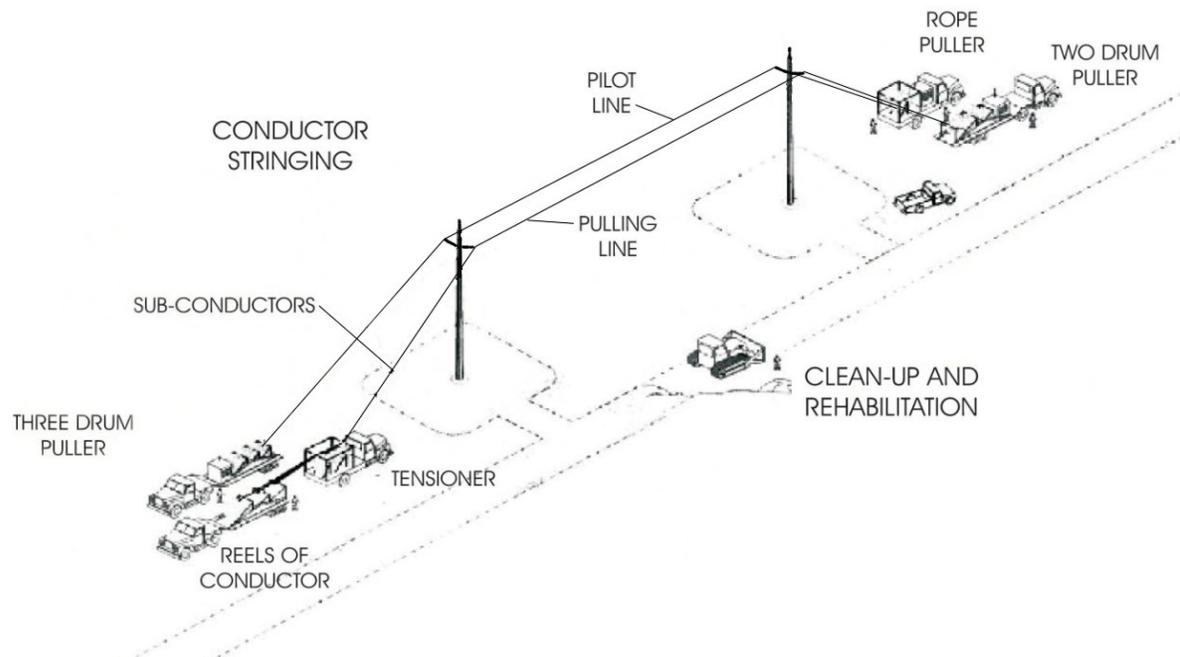
Conductor splicing would be required at the end of a conductor spool or if a conductor is damaged during stringing. This work would occur on work areas for the poles or pulling/tensioning sites. The conductor would be strung using powered pulling equipment at one end and powered braking or tensioning equipment at the other end.

After installing the conductor and fiber optic shield wire, sagging, clipping, and dead-ending activities would be performed. This process would involve adjusting tension of the conductors and shield wires, removing stringing sheaves, and permanently attaching the conductor to the insulators with specialized hardware.

**FIGURE 3-7 TYPICAL POLE CONSTRUCTION SEQUENCE**



**FIGURE 3-8 TYPICAL CONDUCTOR STRINGING ACTIVITIES**



### 3.6.4 Underground Distribution Line Construction

Installation of the underground 12.5 kV distribution line described in Section 3.5.5 would involve the following activities: ROW clearing, trenching, duct bank and transition structure installation, cable installation, backfilling, and site restoration.

#### **ROW Clearing**

Similar to overhead transmission construction, underground construction would begin by staking the ROW boundaries and marking sensitive resources. Existing underground utilities would be identified and marked prior to the start of construction. All shrubs and trees would be cleared in the area to be trenched for installation of the underground conduit.

#### **Trenching**

Most commonly, a backhoe is used to dig the trench. The excavation would start with the removal of the top soil. Trench size would be six to eight feet deep. Should groundwater be encountered during trenching activities, it may be pumped from the excavation site to a suitable upland area or pumped directly into a tanker truck for transport to a suitable location for release. If bedrock or subsoils primarily consisting of large boulders are encountered, blasting may be required.

The approximate 1,200 foot long underground distribution cable would occur within an existing concrete driveway and concrete paved parking lot. Prior to construction, existing utilities would be identified; should utilities be identified they would be marked and appropriate notification and coordination with utilities would occur. PacifiCorp would coordinate all construction activities with the Property owner to ensure adequate parking is provided during construction activities. Trenching would begin by marking the trench route, saw-cutting and/or breaking the pavement for removal, and digging the trench with the use of a backhoe. The trench would be approximately six to eight feet deep.

**Duct Bank and Transition Structure Installation**

The underground cable system would be encased in concrete duct banks in order to provide additional mechanical protection, reduce the need for re-excavation in the event of a cable failure, and allow for shorter lengths of trench to be opened at any one time for construction or maintenance activities. The duct banks would be assembled using polyvinyl chloride conduit and spacers.

A transition structure would be required in order to transition the distribution line from underground to above-ground. The insulated conductor of the above-ground line would be linked through a solid insulator device to the underground cable.

**Cable Installation**

Following cleaning and testing of the conduit, the distribution cable would be pulled from the pulling vault near the proposed new substation to a transition structure. The cable lengths would be spliced within the vaults.

**Backfilling**

Following installation of the duct banks, the conduits would be backfilled with native soil in order to dissipate the heat generated from the buried cables. In the case that native soil is not conductive to heat generated by the cables, a special sandy backfill material would be used to ensure sufficient heat transfer to the surrounding soils and groundwater.

**3.6.5 Construction Workforce and Equipment**

Construction of the new substation and upgrade of existing transmission lines and distribution lines is anticipated to commence in the fall of 2016. The target date for commercial operation of the Project is December 2017.

The construction of the substation and upgrades to the transmission and distribution lines would be performed concurrently and would take approximately six to 12 months, with construction personnel working 10-hour days, five days a week. Approximately 43 workers would be required for construction (refer to Tables 3-3 through 3-7 for the estimated number of personnel and equipment).

It is estimated that the workforce would consist of approximately 10 percent supervisory, 60 percent skilled labor, and 30 percent unskilled labor. It is anticipated that about 50 percent of this work force would be hired locally. Those who are not locals normally take temporary housing in nearby communities and commute to and from the job site on a daily basis.

**TABLE 3-3 DEMOLITION OF EXISTING STRUCTURES - ESTIMATED PERSONNEL AND EQUIPMENT**

ACTIVITY	PEOPLE	QUANTITY AND TYPE OF EQUIPMENT
Demolition of Existing Structures	4	1 Pickup truck
		1 Excavator (with thumb)
		1 Track loader
		2 Dump trucks
<b>Total Workforce:</b>	<b>4*</b>	

\*Maximum total personnel required considering all tasks; actual personnel onsite at any one time will be less.

**TABLE 3-4 SUBSTATION CONSTRUCTION - ESTIMATED PERSONNEL AND EQUIPMENT**

ACTIVITY	PEOPLE	QUANTITY AND TYPE OF EQUIPMENT
Construction Management	1	1 Pickup truck
Survey	3	1 Pickup truck
Site Preparation/Grading	5	1 Backhoe
		1 Bulldozer
		2 Dump trucks
		1 Water truck
Material Haul	3	1 Pickup truck
		1 Tractor/trailer
		2 Yard and field cranes or line trucks
Access Road Construction	2 to 3	1 Fork lift
		1 Bulldozer (D-8 Cat)
		1 Motor grader
		1 Pickup truck
Concrete Placement and Formwork	5	1 Water truck (for construction)
		1 Pickup truck
		1 Concrete truck
Steel Installation	5	1 Flatbed truck
		1 Pickup truck
		1 Crane
		1 Bucket truck
Equipment Installation	4	1 Forklift
		1 Crane
		1 Manlift
		1 Pickup truck
Bus Work	4	1 Manlift
		1 Welder
		1 Crane
Testing and Energization	2	1 Pickup truck
Fencing	4	
Marshalling Yard	2	
		1 Bulldozer wide track
Right-of-Way Restoration and Cleanup	4	1 Dump truck
		1 Pickup truck
<b>Total workforce:</b>	<b>42-43*</b>	

\*Maximum total personnel required considering all tasks; actual personnel onsite at any one time will be less.

**TABLE 3-5 TRANSMISSION/DISTRIBUTION LINE CONSTRUCTION - ESTIMATED PERSONNEL AND EQUIPMENT**

ACTIVITY	PEOPLE	QUANTITY AND TYPE OF EQUIPMENT
Construction Management	1	1 Pickup truck
Survey	3	1 Pickup truck
Access Road Construction	2	1 Bulldozer (D-8 Cat)
		1 Motor grader
		1 Pickup truck
Auger Holes, Direct Embed Poles	5	1 Water truck
		1 Hole digger
		1 Pickup truck
		1 Line truck
Material Haul	3	1 Pump
		1 Tractor trailer
		2 Yard and field cranes or line truck
Structure Assembly and Installation	5	1 Forklift
		1 Pickup truck
		1 Line truck
		1 2-ton truck
Structure Erection	5	1 Bucket truck
		1 2-ton truck
		1 Pickup truck
		1 Bucket truck
Wire Installation (includes old wire removal)	8	1 Line truck
		1 Wire reel trailer
		1 Diesel tractor
		1 Crane
		3 Pickup trucks
		2 Bucket trucks
		2 3-drum pullers
		1 Single-drum puller
1 Double bull-wheel tensioner		
Right-of-Way Restoration and Cleanup	4	1 Static wire reel trailer
		1 Bulldozer wide track
		1 Dump truck
<b>Total workforce:</b>	<b>31*</b>	1 Pickup truck

\*Maximum total personnel required considering all tasks; actual personnel onsite at any one time will be less.

**TABLE 3-6 DEMOLITION OF MT. SHASTA SUBSTATION - ESTIMATED PERSONNEL AND EQUIPMENT**

ACTIVITY	PEOPLE	QUANTITY AND TYPE OF EQUIPMENT
Equipment Removal	4	1 Crane
		1 Forklift
		1 Pickup truck
		1 Bucket truck
Foundation Removal	4	1 Backhoe (concrete breaker)
		1 Backhoe
		2 Dump trucks
		1 Pickup truck
Grading	4	1 Pickup truck
		1 Bulldozer
		1 Backhoe
		2 Dump trucks
<b>Total Workforce:</b>	<b>12</b>	

\*Maximum total personnel required considering all tasks; actual personnel onsite at any one time will be less.

**TABLE 3-7 EQUIPMENT EXPECTED TO BE USED DURING PROJECT CONSTRUCTION**

TYPE OF EQUIPMENT	USE
2-ton truck	Transport personnel, tools, and materials
3-drum pullers	Pull and tension of the conductor
Backhoe	Move/compact soils
Backhoe (concrete breaker)	Move/break up large rocks and concrete foundations
Bucket truck	Lift and transport workers
Bulldozer	Move/compact soils
Bulldozer (D-8 Cat)	Move/compact soils
Bulldozer wide track	Move/compact soils
Concrete truck	Transport concrete to substation construction site
Crane	Install pole structures, lift & transport heavy construction items
Diesel tractor	Pull pole trailer for multi-pole loads
Double bull-wheel tensioner	Pull and tension of the conductor
Dump truck	Haul material
Excavator	Move/compact soils
Flatbed truck	Transport personnel, tools, and materials
Forklift	Lift and transport heavy construction items
Line truck	Haul conductor, poles, equipment, materials, and people, and install poles/conductor
Manlift	Lift and transport workers
Single-drum puller	Install conductor
Static wire reel trailer	Transport reels of conductor
Track loader	Move soils
Water truck	Dust control
Welder	Installation of substation components
Wire reel trailer	Transport reels of conductor

### 3.6.6 Construction Schedule

Table 3-8 provides a summary of the proposed construction schedule for the proposed Project. The construction schedule is expected to last approximately six to 12 months, with construction of the new Lassen Substation, pole removal/replacement, and upgrade of the existing distribution lines occurring concurrently. The Mt. Shasta Substation would be demolished after completion and energization of the Lassen Substation.

**TABLE 3-8 PROPOSED CONSTRUCTION SCHEDULE**

PROJECT ACTIVITY	PROPOSED PROJECT
Permit to Construct decision adopted and effective	October 2016
Acquisition of required permits	October 2016 – December 2016
Right-of-way/property acquisition	Complete
Final engineering completed	August 2016
Construction begins	December 2016
Transmission line construction	December 2016 – July 2017
Distribution line upgrade	December 2016 – August 2017
Substation construction	December 2016 – December 2017
Project operational	December 2017
Removal of Mt. Shasta Substation/Cleanup	September 2017 - November 2017

### 3.7 Operation and Maintenance

The nominal voltage for the new transmission line would be 69 kV at the start of Project operation. PacifiCorp intends to convert the 69 kV Line 2 to 115 kV operation in the future as part of a long-term plan to separate area subtransmission from the 115 kV Line 14, which is a dedicated WECC transmission path carrying scheduled power flow. To prepare for this conversion, the proposed new substation would be designed for the 115 kV system but initially operated at 69 kV. There may be minor voltage variations of up to five percent above the nominal voltage level depending upon load flow.

The substation would not require an operational workforce; however, maintenance or repair crews would periodically visit the substation on a monthly or as-needed basis.

The U.S. Environmental Protection Agency's (USEPA) Oil Pollution Prevention regulation (40 Code of Federal Regulations [CFR] Part 112) requires Spill Prevention, Countermeasure and Control (SPCC) plans for facilities with a total above-ground oil storage capacity of greater than 1,320 gallons to prevent oil spills from reaching Waters of the U.S. The SPCC plan, prepared for the proposed Project, would include engineered and operational methods for preventing, containing, and controlling potential releases and provisions for a quick and safe cleanup. In general, the proposed substation site would be surfaced with gravel to reduce the migration of oil spills, and additional engineered methods (e.g., concrete berms, Petro-Barriers) would prevent any spills from leaving the substation site. The proposed Lassen Substation would also be gated with chain link fencing to prevent access to equipment by unauthorized persons. The SPCC plan would be certified by a professional engineer and a complete copy would be maintained on-site.

**Maintenance**

The 69 kV transmission line would be inspected and maintained in a manner consistent with CPUC GO-165. Inspection would occur at least once per year by ground patrols. Maintenance would be performed as needed. When access is required for non-emergency maintenance and repairs, PacifiCorp would adhere to the same precautions that were taken during the original construction. Inspection typically consists of a visual inspection, typically consisting of one crew member, accessing the site by pick-up truck.

PacifiCorp uses industry-standard monitoring and protection equipment on its transmission system, including power circuit breakers and related line-relay protection equipment. If a conductor fails, power would be automatically removed from the line.

Emergency maintenance would involve prompt movement of repair crews to repair or replace any damaged equipment. Crews would be instructed to protect crops, plants, wildlife, and other resources of significance, as feasible. Restoration procedures following completion of repair work would be similar to those prescribed for normal construction. The comfort and safety of local residents would be provided for by limiting noise, dust, and the danger caused by maintenance vehicle traffic.

**3.8 Applicant Proposed Measures**

With incorporation of the following APMs listed in Table 3-9, Project impacts would be less than significant. The APMs are discussed in context with the respective environmental resources presented in Chapter 4, Environmental Setting and Impact Assessment Summary.

**TABLE 3-9 APPLICANT PROPOSED MEASURES**

APM #	DESCRIPTION
<b>Air Quality</b>	
APM AQ-1	<p><b>Construction Dust Control Measure:</b> Particulate matter emissions shall be controlled by implementing standard construction dust control measures including, but not limited to, the following:</p> <ul style="list-style-type: none"> <li>• Minimize soil disturbance.</li> <li>• Regularly water disturbed areas, including on-site vehicle/equipment travel routes and soil stockpiles. Watering should be sufficient to prevent airborne dust from leaving the site.</li> <li>• Curtail earth-moving activities on windy days.</li> <li>• Ensure that the engines of all construction equipment are properly tuned.</li> <li>• Limit the maximum speed to 15 miles per hour on unpaved surfaces.</li> <li>• Replant vegetation in disturbed areas as quickly as possible.</li> <li>• Implement other effective particulate matter control measures, as needed.</li> </ul> <p>Greenhouse gas emissions generated during Project construction shall be minimized by implementing the following measures:</p> <ul style="list-style-type: none"> <li>• Use Air Resources Board (ARB)-certified construction equipment, where available.</li> <li>• Use alternative fuel types for construction equipment where feasible.</li> <li>• Use local building materials.</li> <li>• Limit construction vehicle idling time.</li> </ul>
<b>Biological Resources</b>	
APM BIO-1	<p><b>Pre-construction Surveys:</b> Focused pre-construction surveys for special-status plant species shall be conducted in appropriate habitat, according to U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW) protocols for species having a specified protocol, or according to standard, scientifically accepted systematic surveys appropriate for each species. Surveys will be</p>

APM #	DESCRIPTION
	<p>conducted in areas of planned ground disturbance. To the extent feasible, avoidance modifications in the placement of transmission towers, access and spur roads, and of various marshalling and staging areas shall be made in accordance with the final Project design and needs. If special-status plant species are located during focused surveys within the Project area, avoidance measures shall be incorporated. If avoidance is not possible, relocation efforts, including topsoil salvage and relocation, if necessary, will be implemented. If PacifiCorp proposes any changes to the current construction plan or pole replacement sites after focused surveys for special-status species are conducted, additional field surveys shall be required prior to construction activities.</p> <p>Pre-construction biological clearance surveys shall be conducted to avoid or minimize potential impacts to special-status wildlife species. If burrows are located during surveys, avoidance measures shall be incorporated and the Environmental Monitor shall proceed as described in APM BIO-6.</p>
APM BIO-2	<p><b>Vehicle Undercarriage Washing:</b> Prior to first use, the under-carriages, wheels, and bodies of construction and operations equipment previously used outside of the Project area shall be thoroughly washed in maintenance yards by high pressure jets to eliminate any soil buildup that may contain invertebrates, such as insects and insect eggs, or the seeds of exotic plant species.</p>
APM BIO-3	<p><b>Minimize Impacts to Native Vegetation:</b> Every reasonable effort shall be made to minimize temporary and permanent removal of native vegetation at work areas. If required, native vegetation shall be flagged for avoidance. If native vegetation cannot be avoided, it will be crushed rather than bladed. A project revegetation plan shall be prepared for areas of native vegetation temporarily affected by Project construction activities.</p>
APM BIO-4	<p><b>Minimize Riparian Disturbance:</b> Construction crews shall avoid affecting the streambeds and banks of any streams along the route, to the extent feasible. If necessary, a Lake and Streambed Alteration Agreement (LSAA) will be secured from the CDFW. Impacts will be mitigated based on the terms of the LSAA. No streams with flowing waters or those capable of supporting special-status species would be expected to have permanent adverse impacts from project implementation.</p>
APM BIO-5	<p><b>Temporary Access to Wetlands:</b> To avoid impacts from temporary access to wetland areas, existing access roads and temporary access methods (e.g., high density polyethylene driving mats, portable road platforms) shall be used to access pole replacement sites. Results of the wetland delineation (Appendix D) shall be incorporated into vehicle access routes, which shall be designed to avoid and minimize wetland disturbance.</p>
APM BIO-6	<p><b>Environmental Monitor During Construction Activities:</b> Environmental Monitors shall be assigned to the Project, and will be responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, or unique resources are avoided to the fullest extent possible. The monitor shall delineate and mark for avoidance in the field all known sensitive resource locations and, where appropriate, use flagging to delineate boundaries of areas from where activities are restricted to protect native plants and wildlife, or special-status species. If the monitor determines that project activities may adversely affect the species, the monitor shall consult with USFWS and/or CDFW regarding appropriate avoidance measures. These restricted areas shall be monitored during construction to ensure their protection.</p>
APM BIO-7	<p><b>Avoid Impacts to Active Nests:</b> PacifiCorp shall conduct all pole installation, conductor installation, tree trimming, tree removal, grading and clearing of vegetation from September 1 – February 28, outside of the nesting season. The March 1 – August 31 nesting season dates are guidelines: nesting season may begin earlier or end later depending on weather conditions; nests will be protected regardless of the calendar date. If construction cannot be completed outside of the nesting season, pre-construction surveys within the Project area will be conducted by a qualified biologist for nests prior to ground disturbance, tree trimming or other construction activities. The nesting bird clearance survey will be conducted within three days prior to construction activities. For passerines, a 50-foot buffer will be installed around the nest and maintained around the nest until the young have fledged. A larger buffer may be required if nesting birds appear stressed. Nesting raptors require a larger buffer area than passerines. If a raptor nest is observed, a 300-foot buffer will be installed. If a nesting raptor is observed within 300 feet of the Project area prior to the start of construction, a qualified biologist will determine whether or not construction activities could potentially disturb nesting raptors and implement appropriate measures (e.g., onsite monitor, timing restriction) to adequately protect nesting raptors.</p>

APM #	DESCRIPTION
APM BIO-8	<b>Worker Environmental Awareness Program:</b> A Worker Environmental Awareness Program (WEAP) shall be prepared and all construction crews and contractors shall be required to participate in WEAP training prior to starting work on the Project. The WEAP training shall include a review of the special-status species and other sensitive resources that could occur in the Project area, the locations of any existing sensitive resources, their legal status and protections, and measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained shall be maintained.
APM BIO-9	<b>Impact Assessment/Bird Observation Surveys:</b> Migratory bird flight paths in the Project area are currently unknown. An impact assessment study and bird observation surveys shall be conducted according to the Avian Power Line Interaction Committee's (APLIC's) (1994) survey protocol. The surveys shall be conducted within wetlands along both sides of the existing transmission line within the study area. The surveys shall be done in consultation with CDFW. Results of the bird observation surveys will determine potentially impacted species and locations to mark wires to increase their visibility to flying birds. Line markers should be designed to be raptor-safe in accordance with the Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2012 (APLIC 2012), evaluated and approved by PacifiCorp engineers prior to implementation.
APM BIO-10	<b>Access Restrictions:</b> Vehicles shall be restricted to previously established roadways and access routes.
APM BIO-11	<b>General Site Maintenance:</b> Trash, dumping, firearms, open fires, hunting, and pets shall be prohibited in the Project area.
<b>Hazards and Hazardous Materials</b>	
APM HAZ-1	<b>Health and Safety Plan:</b> A Health and Safety Plan shall be prepared and made available once a contractor is procured for the construction of the proposed Project. The plan should include, and not be limited to, information on the appropriate personal protective equipment to be used during construction. All transport of hazardous materials would be in compliance with applicable laws, rules and regulations, including the acquisition of required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations.
APM HAZ-2	<p><b>Hazardous Substance Control and Emergency Response Plan:</b> PacifiCorp shall prepare and implement a Hazardous Substance Control and Emergency Response Plan as needed. The procedures identify methods and techniques to minimize the exposure of the public and site workers to potentially hazardous materials during all phases of Project construction through operation. The Plan would include, but not limited to, worker training appropriate to the site worker's role in hazardous substance control and emergency response. The procedures also require implementing appropriate control methods and approved containment and spill-control practices for construction and materials stored on site. If it is necessary to store chemicals on site, they would be managed in accordance with all applicable regulations. Material safety data sheets would be maintained and kept available on site, as applicable.</p> <p>All hazardous materials and hazardous wastes would be handled, stored, and disposed of in accordance with all applicable regulations, by personnel qualified to handle hazardous materials. The hazardous substance control and emergency response procedures include, but are not limited to, the following:</p> <ul style="list-style-type: none"> <li>• Proper disposal of potentially contaminated soils.</li> <li>• Establishing site-specific buffers for construction vehicles and equipment located near sensitive resources.</li> <li>• Emergency response and reporting procedures to address hazardous material spills.</li> <li>• Stopping work at that location and contacting the County Fire Department Hazardous Materials Unit immediately if visual contamination or chemical odors are detected. Work will be resumed at this location after any necessary consultation and approval by the Hazardous Materials Unit.</li> </ul> <p>PacifiCorp will complete its Emergency Action Plan Form as part of project tailboard meetings. The purpose of the form is to gather emergency contact numbers, first aid location, work site location, and tailboard information.</p>
APM HAZ-3	<b>Spill Prevention, Countermeasure and Control Plan (SPCC):</b> An SPCC shall be prepared and certified by a professional engineer; a complete copy would be maintained on-site. The SPCC plan would include engineered and operational methods for preventing, containing, and controlling potential releases and provisions for a quick and safe cleanup.

APM #	DESCRIPTION
<b>Hydrology and Water Quality</b>	
WQ-1	<p><b>Storm Water Pollution Prevention Plan (SWPPP) or Erosion Control Plan Development and Implementation:</b> An erosion and sediment control plan would be developed prior to construction and included as part of the required SWPPP. The goal of the SWPPP will be to remove sediment and wastes from runoff before the runoff is discharged from the Project site. This would be accomplished by:</p> <ul style="list-style-type: none"> <li>• Minimizing the acreage of disturbed and exposed soil during the construction phase and implementing stabilization measures where necessary.</li> <li>• Removing sediment from runoff before it leaves the site.</li> <li>• Complying with specific erosion and sediment control measures specified within the erosion and sediment control plan.</li> </ul> <p>Applying and maintaining standard erosion and sedimentation control methods would minimize erosion and water quality impacts. These methods may include preservation of existing vegetation or use of geomats, straw wattles, straw bale barriers or silt fencing, which would be placed at construction boundaries. Gravel ramps may be installed at access points to public roadways to prevent or minimize the tracking of mud, dirt, sediment, or similar materials onto the roadway. Selection of appropriate erosion control materials will be based on soil properties, steepness of the slope, and anticipated surface flow or runoff.</p> <p>Diesel fuel, gasoline, oil, and other lubricants, as well as adhesives and sealants, would be utilized during the construction of the transmission line and substation. Bulk quantities may be stored in the designated construction yard/staging area. Vehicle fueling and maintenance activities would be restricted to staging areas or approved areas away from drainage channels and sensitive habitats. All construction vehicles would be monitored for leaks and receive regular off-site preventive maintenance to reduce the chance of leakage.</p> <p>A copy of the SWPPP or erosion control plan will be provided to the CPUC prior to construction for recordkeeping. The plan will be updated during construction as required by the State Water Resources Control Board (SWRCB).</p>
APM WQ-2	<p><b>Reseeding:</b> To reduce visual contrast and siltation in construction where ground disturbance is substantial, surface preparation and reseeding shall occur. The method of restoration would normally consist of loosening the soil surface, reseeding, installing cross drains for erosion control, placing water bars in the road, and filling ditches.</p>
APM WQ-3	<p><b>Pole Placement Minimize/Avoidance:</b> To minimize the amount of sensitive features disturbed in designated areas, poles would be placed so as to avoid sensitive features and/or to allow conductors to clearly span the features, within limits of standard pole design. If the sensitive features cannot be completely avoided, poles would be placed so as to minimize the disturbance.</p>
<b>Traffic and Transportation</b>	
APM TT-1	<p><b>Traffic Management Plan:</b> Prior to the start of construction, PacifiCorp shall prepare a Traffic Management Plan. The Plan would define the use of flag persons, warning signs, lights, barricades, cones, etc. to control construction traffic. The Plan would include but not limited to the following:</p> <ul style="list-style-type: none"> <li>• All property owners and residents of streets affected by construction shall be notified prior to the start of construction. Advance public notification shall include postings of notices and appropriate signage of construction activity. Access to all residences and properties near the Project shall be maintained at all times.</li> <li>• All construction activities shall be coordinated with local law enforcement and fire protection agencies. Emergency service providers shall be notified of the timing, location, and duration of construction activities.</li> <li>• Road use-related wear and tear shall be documented during construction of transmission line facilities and PacifiCorp shall repair any damaged roadway sections, as applicable.</li> </ul>

### 3.9 Electric and Magnetic Fields Summary

Electric and magnetic fields (EMF) occur throughout nature and are one of the basic forces of nature. Any object with an electric charge on it has a voltage (potential) at its surface and can create an electric field. The change in voltage over distance is known as the electric field. When electrical charges move together (known as “current”), they create additional forces on each other. These additional forces are represented by magnetic fields. All currents create magnetic fields.

For extremely low-frequency fields, the strength of electric and magnetic fields are related to the voltage and current, respectively, and to the distance away from the source. The strength of the electric field depends on the voltage (higher voltages create higher electric fields) and the distance (electric fields grow weaker as distance from the source increases). Similarly, magnetic field strength depends on current (higher currents create higher magnetic fields) and the distance (magnetic fields grow weaker as distance from the source increases). At frequencies much higher than power frequency (60 hertz [Hz]), such as radio frequencies, the electric and magnetic fields can be interrelated.

EMF can be static (unchanging) in direction (direct current [DC]) or changing/alternating in direction (alternating current [AC]). Static electric fields can result from taking off a sweater or walking across a carpet. Body voltages as high as 8,000 to 16,000 volts (8 to 16 kV) have been measured on a person as a result of walking across a carpet (Chakravarti and Pontrelli 1976). The earth has a natural static electric field of about 120 to 150 volts/meter (0.12 - 0.15 kilovolt per meter [kV/m]) at ground level due to the 300,000 to 400,000 volt potential difference between the ionosphere and the earth (National Research Council 1986). This means that a six-foot-tall person would have a static potential of about 275 volts between the top and bottom of his or her body. Much stronger static electric potentials can exist underneath clouds, where the electric potential to earth can reach 10 million to 100 million volts. Natural static electric fields under clouds and in some dust storms can reach 30 to 10 kV/m (National Research Council 1986; CRC Press 1981). Static magnetic fields also occur in nature. The earth has a natural static magnetic field of about 500 milligauss (mG) in the Mt. Shasta, California area (Merrill and McElhinney 1983).

The electric power distribution system, wiring in buildings, and electrical appliances create AC electric and magnetic fields. In the United States, the power system uses current that alternates 60 times each second (60 Hz). Almost all household appliances create an electric field. This is due to the voltage on the appliance. To create an electric field, the appliance need not be operating, but just plugged into the wall socket. Typical reported values measured one foot away from some common household appliances are shown in Table 3-10 (Sheppard and Eisenbud 1977).

**TABLE 3-10 TYPICAL ELECTRIC FIELD VALUES AT ONE FOOT FROM COMMON APPLIANCES**

APPLIANCE	ELECTRIC FIELD (kV/m)
Electric Blanket <sup>1</sup>	0.250
Broiler	0.130
Stereo	0.090
Refrigerator	0.060
Iron	0.060
Hand Mixer	0.050
Toaster	0.040
Hair Dryer	0.040
Coffee Pot	0.030
Clock	0.015

<sup>1</sup> Electric fields can reach 1 - 10 kilovolts per meter (kV/m) next to the blanket wires

Overhead electric transmission lines and distribution lines also create 60 Hz electric fields. The strength of the electric field is primarily a function of line voltage, height of the conductors above ground, the arrangement of the electrical wires, and distance away from the line. Unlike magnetic fields, electric fields can easily be shielded (or weakened) by the presence of conducting objects. For example, a typical house shields about 90 to 95 percent of electric fields from outside sources (Carnegie Mellon University 1995). Other objects, such as trees, shrubs, walls, and fences, would also provide electric field shielding. Underground transmission lines do not produce electric fields, since the earth shields the electric field.

The 60 Hz magnetic fields under most overhead transmission and distribution lines are usually smaller than values near many common household appliances. The main reason for this is the height above ground at which electric power lines are supported. Since the field decreases with distance away from the source, the line height above ground effectively reduces the magnetic field to levels that are less than many appliances.

EMF modeling was conducted to determine potential EMF levels within the proposed substation and along the existing 69 kV line. The highest calculated electric fields for the study area exist in the substation. The maximum calculated electric field for the existing 69 kV system is 3.5 kV/m and the maximum calculated electric field for the future 115 kV system is 5.75 kV/m. These electric fields are primarily due to the 115 kV bus work.

For the existing 69 kV system, the calculated electric fields range from 0.02 kV/m on the east side of the property line boundary to 1.6 kV/m on the west side of the property line boundary (which is due to the transmission lines being routed from this side of the property). The calculated electric fields are highest outside of the substation at the first structure where both transmission circuits are located on the pole before being routed to the north and south (the model was based on the circuits having the same phasing, which produces the most conservative electric field calculations). At this pole, the maximum calculated electric fields are 0.7 kV/m and 2.25 kV/m for the existing 69 kV system and future 115 kV system, respectively.

The transmission line span from the substation to Pole 13/48 has both circuits. At midspan (lowest point of the phase conductor to ground), the maximum electric field is 0.75 kV/m and 2.25 kV/m for the 69 kV system and 115 kV system, respectively.

The highest electric fields for the single-circuit transmission line spans in the area of the pole replacements is 0.25 kV/m and 0.4 kV/m for the 69 kV system and 115 kV system, respectively (refer to the EMF Management Plan).

### **3.9.1 Stray Voltage**

Stray voltage is generally caused by voltage drop and ground currents that could have their origin either on the utility system or on the customer's premises itself. Stray voltages result from the normal delivery and/or use of electricity (usually smaller than 10 volts) that may be present between two conductive surfaces that can be simultaneously contacted by members of the general public and/or their animals. The problem can be very difficult to analyze, since the return path of the unbalanced currents is especially complex. In many circumstances, system changes to mitigate the problem can cause the opposite effect. Stray voltages are not considered lethal.

As part of Project design, PacifiCorp would implement methods to reduce stray voltage, such as improved grounding, larger distribution line neutrals, and balancing of circuits. One of the most effective tools is a neutral isolator, which isolates the distribution neutral during normal conditions.

### **3.10 Permitted Uses**

After the transmission line has been energized, land uses that are compatible with safety regulations and operation and maintenance activities (such as agriculture and grazing) would be permitted in and adjacent to the ROW. Incompatible land uses within transmission line ROW include construction and maintenance of inhabited dwellings, and any use requiring changes in surface elevation that would affect existing or planned facilities.

Land uses that comply with local regulations would be permitted adjacent to the ROW, but would require approval from the appropriate agency. Permission to use the ROW on private lands would have to be obtained from PacifiCorp.

### **3.11 Safety**

Safety is a primary concern in the design of the transmission system. The transmission line would be protected with power circuit breakers and related line relay protection equipment. If conductor failure occurs, power would be automatically removed from the line. Lightning protection would be provided by overhead ground wires along the line. Electrical equipment and fencing at the substation would be grounded. All fences, metal gates, pipelines, etc., that cross or are within the transmission ROW would be grounded to prevent electrical shock. If necessary, grounding outside of the ROW may also occur.

### **3.12 Abandonment**

At the end of the useful life of the proposed Project, if the facility were no longer required, the transmission line would be abandoned under the terms of the easement agreement. Subsequently, poles, conductors, insulators and hardware would be dismantled and removed from the ROW.

If the line and associated ROW are abandoned at some future date, the ROW would be available for the same uses that existed prior to construction of the Project. Following abandonment and removal of the transmission line from the ROW, any areas disturbed due to dismantling the line would be restored and rehabilitated as near as possible to their original conditions.

## 4.0 ENVIRONMENTAL SETTING AND IMPACT ASSESSMENT SUMMARY

### Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by this Project, involving at least one impact that is a “Potentially Significant Impact” as indicated by the description of each environmental factor on the following pages.

	Aesthetics
	Agriculture and Forestry Resources
	Air Quality
	Biological Resources
	Cultural Resources
	Geology/Soils
	Greenhouse Gas Emissions
	Hazards & Hazardous Material
	Hydrology/Water Quality
	Land Use/Planning
	Mineral Resources
	Noise
	Population/Housing
	Public Services
	Recreation
	Transportation/Traffic
	Utilities/Service Systems
	Mandatory Findings of Significance

## Determination

On the basis of this initial evaluation:

	I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
	I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
	I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
	I find that the proposed project MAY have a “potentially significant impact” or “potentially significant unless mitigated” impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
	I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

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Signature

Date

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Printed Name, Title

## 4.1 Introduction

As required by CPUC Rule 17.1 and Go-131-D, the CEQA Initial Study Checklist was used to focus the impact analysis for the proposed Project. In conformance with CEQA, the PEA provides information to the CPUC regarding the potential environmental consequences of the Project. The methodologies used for determining standards of significance of all impact categories analyzed in the PEA (Appendix G of the revised CEQA Guidelines) are described below for each environmental topic. The standards of significance include those regulations and policies from resource agencies and local governments with jurisdiction over the Project located within the Project study area (0.5 mile from the substation site). Based on the significance criteria, potential impacts are categorized as either (1) potentially significant, (2) potentially significant unless mitigation is incorporated, (3) less than significant, or (4) no impact.

## 4.2 Aesthetics

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect on a scenic vista?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) Substantially degrade the existing visual character or quality of the site and its surroundings?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

### 4.2.1 Methodology

The visual study area was determined by considering the distance at which potentially significant or adverse impacts would occur. This was based on the scale of the Project and its visual influence on viewers and the landscape. This threshold, determined to be approximately 0.75 mile from the Project, was based on previous experience with the assessment of visual impacts of transmission/distribution lines, the influence of forested areas on limiting viewing distances, and previous studies conducted on the visibility of transmission lines in the landscape (see Jones and Jones 1976). Visibility from selected viewpoints outside of this study area (e.g., Lake Siskiyou, State Highway (SH) 89 Scenic Highway, National Forest Lands, and City of Mt. Shasta Scenic View Shed Areas) was also considered.

The assessment of aesthetic resources in the proposed Project area included a review of the proposed Project development plans, regional and local regulatory guidelines, and current land use, wetlands, botanical and transportation data. Examination also included the study of aerial photography, topographical maps, and site photography. Viewer characteristics and the development character for the study area were determined by reviewing land use data and documenting the existing visual setting during field reconnaissance, and by estimating expected viewer use levels, viewing duration

and viewer attitudes of existing conditions. Visual contrast based on change in landform, vegetation, and structures was weighed against viewer sensitivity and distance from specific representative viewpoints that captured the range of viewing conditions and visibility in the Project area. After determining qualitative levels of visual impacts due to overall contrasts, conclusions were related to thresholds of significance and CEQA guidelines.

There are no formal guidelines for managing visual resources on private-, State- or county-owned lands within the visual study area. Therefore, the methodology used in this study integrates concepts of the Bureau of Land Management's (BLM) Visual Resource Management (VRM) Inventory and Contrast Rating System (BLM 1986) system, modified to address the developed landscapes of the visual study area. The inventory and contrast rating system was tailored for this Project and carried out in conformance with the CPUC guidelines for Applicants Filing a PEA.

Potentially sensitive viewpoints that could be impacted by the Project were identified. Sensitive viewpoints were identified through investigation of agency websites, land use data, aerial photography and field investigation. Photography of the landscape character, visual quality and typical views experienced by various viewer types was documented.

Visual sensitivity was determined for viewpoints located in the Project area. Visual sensitivity is a measure of viewer concern for a scenic resource and the potential changes to the resource. To measure view sensitivity, the criteria of user attitude, duration of view, and use volume were

*User Attitude* reflects the behavior or activity associated with the personal interaction with a viewpoint or viewed area. It is the type of user and the user's level of expectation for a scenic experience. As an example, hikers in national park or wilderness areas are typically considered more sensitive than local highway commuters.

*Duration of view* is defined as the length of time that a viewer would typically encounter a particular view. For example, a view from a residence is considered to be a long duration view because the landscape could be viewed at any time of day and for any length of time. Conversely, the amount of time a commuter would see a viewed area from a highway would be very short and thus generally considered a short duration view.

*Use volume* reflects the number of users. As an example, a busy arterial road would have a higher volume of users than a local street. Likewise, a destination regional park would typically have a higher volume of users than a neighborhood playground.

The combination of these criteria produces an overall sensitivity level for a viewpoint, categorized into viewer groups. Viewpoints selected are representative of the most visually sensitive areas that may be affected by the Project. Viewpoints are also selected to depict the range of viewing experiences within the Project viewshed and visual study area. Three viewpoints were used to prepare visual simulations to photographically show how the proposed Project would compare with the existing conditions (see Appendix A: Visual Simulations). Viewer groups that can be considered to have moderate or higher sensitivity are classified into three primary types: residences, motorists, and recreationists.

Visual impacts were determined based on contrasts, visibility and distance of the Project, and viewer sensitivity. Visual contrast is the degree of physical alteration of the landscape without regard to specific viewpoints or viewing conditions. Contrast is determined by the difference in form, line, color, texture, scale and the landscape juxtaposition between a proposed Project and its setting. Visual contrast is made up of three contrast elements:

*Landform contrast* is the change in landform patterns, soil exposure, erosion scars, slumping, and other disturbances that would result in a noticeable and uncharacteristic change in the existing natural or cultural landscape.

*Vegetation contrast* is determined by comparing the level of ground disturbance with the type of existing vegetation. Vegetation contrast is evaluated by the diversity, scarcity and complexity of vegetation types and patterns.

*Structural contrast* examines the compatibility of the proposed facilities within the existing landscape. Structure contrast would be greatest where there are no other structures (e.g., buildings, existing utilities) in the proximate or surrounding landscape.

The following describes some of the conditions associated with each visual contrast level:

- Strong Visual Contrast
  - Contrast caused by the construction of new access roads in steep terrain.
  - Removal of chaparral vegetation for right-of-way, site or access road clearing.
  - A landscape with no existing transmission lines or utility facilities.
- Moderate Visual Contrast
  - Contrasts caused by the construction of new access roads in rolling terrain with occasional short, steep slopes.
  - Removal of grassland or agricultural vegetation for ROW, site or access road clearing.
  - A landscape where the proposed Project is smaller in scale to existing utility facilities.
- Weak Visual Contrast
  - Contrasts caused by the use of existing access roads and limited new spur or construction roads.
  - Minimal removal of vegetation.
  - A landscape where there are existing utility facilities of similar scale to the proposed Project.

Visibility of the Project was determined based on a field review of the Project area, and characterized by representative Viewpoints. Impacts are determined by comparing visibility and distance with Project contrast from representative Viewpoints.

The distance contrasts that are seen will determine impacts on viewers. Distance zones were established based upon the scale and nature of the proposed Project, and the viewing environment. The perception of form, texture, color and other visual elements in the landscape are a function of changes in distance from the viewpoint. Both natural landscapes and built elements tend to become less obvious and detailed as distance increases.

For this Project, a review of previous studies in similar geographical, topographical and environmental settings provided a basis for relevant visibility thresholds. Distance zones identified for this Project are as follows:

*Immediate Foreground:* Viewpoint location to 500 feet – This very high visibility distance zone is where the Project would be dominant and where high and moderate sensitivity viewers would likely be significantly impacted.

*Foreground:* 500 feet to 0.25 mile – This high visibility distance zone is where the Project would potentially be dominant depending on the viewing conditions and where high and moderate sensitivity viewers could be significantly impacted.

*Middleground:* 0.25 mile to 0.75 mile – This is the distance zone where the potential Project impacts on high sensitivity viewers begins to diminish and the Project will become co-dominant or sub-dominant in the landscape, depending on the viewing conditions and setting.

*Background:* 0.75 mile to 1.5 miles – This is the distance zone where the Project is not likely to be perceived by the moderately sensitive casual viewer, and where high sensitivity viewers would be impacted only where the strongest contrasts would occur.

*Seldom Seen:* Beyond 1.5 miles – Beyond 1.5 miles, typical Project elements would not be noticeable to viewers even where strong contrasts occur, and typically would not be seen due to intervening vegetation, topography, atmospheric conditions or other factors.

For high sensitivity viewpoints, high impacts would result from strong or moderate contrasts being seen in the immediate foreground, or strong contrasts being seen in the foreground or middleground. Moderate impacts would result from moderate contrasts being seen in the immediate foreground, foreground or middleground, or strong contrasts being seen in the background. Project contrasts were assessed from each Viewpoint to determine impact and significance.

Three Viewpoints were used to produce photo-simulations within the visual study area (see Appendix A). The simulations are used to depict the expected visual impacts associated with the Project. Digital imaging, geographic information systems (GIS), computer aided design (CAD), and global positioning system (GPS) software assisted in the development of the photo-simulations. The software used in the photo-simulations includes:

- Autocad 2009/Autocad 2014 – Used for modeling site and facilities.
- 3D Studio 2009/3D Studio 2014 – Used for lighting, materials and rendering.
- Adobe Photoshop CS3/Adobe Photoshop CC 2015 – Used for photo manipulation and merging.
- Bentley Microstation v8.5 – Used for modeling of the site, facilities, transmission structures, photo-matching, material patterning, and rendering.
- Bentley Inroads v8.5 – Used for digital terrain mapping (DTM) and modeling.

ArcView – Used for geographic information Project data mapping.

The photographs included below were taken with a Canon DSLR Rebel XSI 12 megapixel digital camera fitted with an 18 millimeter (mm) - 55 mm zoom lens. The photos were taken with an approximate focal length of 50 mm to represent approximate human viewing conditions. The camera was held at eye-level (approximately five feet, nine inches). The date, time of day, GPS coordinate (latitude/longitude) and weather conditions were documented for the photo location. The photographs were matched with Project terrain models developed using Microstation. Computer models of the substation and existing transmission and distribution lines were introduced into the terrain model based on preliminary facility layouts developed in CAD and ArcView. The final image is a composite of the three-dimensional structure modeling and the original photograph. The process ensures that spatial relationships, perspective, proportions and similar attributes are accurate and match existing landscape conditions

## 4.2.2 Environment Setting

### Federal

Interstate 5 (I-5) in the study area is part of the Volcanic Legacy Scenic Byway and designated an All-American Road recognized by Congress in the National Scenic Byways Program of the Federal Highway Administration.

### State

California's Scenic Highway Program was created to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. I-5 in the Project vicinity is not a Designated State Scenic Highway, but is considered an Eligible State Scenic Highway (Caltrans 2014).

### Local

#### *Siskiyou County*

Siskiyou County General Plan refers to the preservation and enhancement of visual resources in the Project area in its Scenic Highways Element and in the Energy Element (Siskiyou County General Plan 1974 and 1993, respectively).

#### *Scenic Highways Element*

- Siskiyou County identifies a scenic route within the study area as I-5 from Highway 97 to Highway 89.
- Principles of The Scenic Route System (A): The scenic route system shall be designed to provide attractive and efficient links between recreational and cultural centers, while providing a variety of experiences and views giving uninterrupted movement of pleasure driving.
- Principles of The Scenic Route Corridor (C): A Scenic Route Corridor shall (2) Locate transmission lines and towers outside of Scenic Corridors when feasible; (3) Establish architectural and site design review by the appropriate local jurisdiction; and (4) Use landscaping to increase scenic qualities.

The Project area is located within a Scenic Highway Corridor (Hickel 2009). Thus, the following objectives from the Scenic Highway Element of the Siskiyou County General Plan would be applicable to the proposed Project:

#### Scenic Highways Element

*Objective 2:* To conserve, enhance, and protect scenic views observable from scenic routes to all major recreational areas throughout the County.

*Objective 4:* To preserve for all travelers the outstanding characteristics of Siskiyou County, primarily clean air and magnificent scenery, so that it may remain, providing incentives for tourism, and to stabilize and increase property values and the economy of Siskiyou County.

#### Energy Element

The following goals, policies, and implementation measures from the Energy Element of the Siskiyou County General Plan would be applicable to the proposed Project:

*Goals and Policies/Energy Facilities #32:* In the absence of compelling or contravening considerations, energy facilities should not be sited in sensitive natural resource areas, including: unstable geologic or soil areas; floodplains; wetlands; habitat of fish or wildlife species of rare, threatened, endangered, or special concern status; known paleontological, archeological, ethnographic, or historical sites; or designated scenic areas.

*Goals and Policies/Energy Facilities #33:* Wherever possible, increased demand for energy transmission shall be accommodated with existing transmission facilities. Where new capacity is necessary, priority shall be given to upgrading or reconstruction of existing facilities, followed by new construction along existing transmission or other utility corridors. Any new transmission facilities shall be sited so as to minimize interference with surrounding land-uses, and in ways that minimize their visual impacts.

*Implementation Measures/Zoning Ordinance K-3:* The siting of transmission lines shall avoid interfering with scenic views, and shall be visually integrated with the surrounding setting to the greatest extent possible. Applicable visual mitigations include, but are not limited to avoiding ridgelines or other visually prominent features, and using non-glare towers and non-specular lines which more readily blend into the natural landscape.

*Energy Element CEQA Initial Study/Environmental Setting/Visual Resources:* The County's scenery is known for its diversity, ruggedness, and primitive character. Its abundance of scenic river canyons, mountain crests and pristine (unroaded) land offers a high-quality setting for a growing number of recreational pursuits, including sightseeing from an auto, a raft, or while hiking.

Approximately 60 percent of the County's land is visible from areas from areas where users are expected to have a high concern for scenic values. Twenty-two percent of the Klamath National Forest's landscapes are classified as highly attractive. These landscapes generally occur in mountain ranges above 5,000 feet elevation, river canyons, large, wet meadows or many other of the Klamath's prominent geologic features. The majority of the County consists of mostly pleasing yet common landscapes located on moderately steep slopes and ridges or on fairly level terrain.

### **City of Mt. Shasta General Plan 2007**

#### Open Space/Conservation Element – Scenic Resources

The City of Mt. Shasta General Plan's Open Space/Conservation Element (City of Mt. Shasta 2007) section identifies scenic landscape features and scenic viewshed areas within the city's planning area limits. It identifies scenic landscapes such as Mt. Shasta, Castle Crags, Mt. Eddy and Eddy Range, Rainbow Ridge, Spring Hill, Quail Hill and Black Butte. None of these features are within or affect the Project's visual study area. The General Plan also introduces a Proposed Viewshed Strategy to protect scenic resources in the city and maps notable viewshed areas. The Project study area does not fall within or affect the designated scenic viewshed areas. The Open Space/Conservation Element (OC) does state a Goal, Policies, and Implementation Measures with peripheral reference to the proposed Project as presented below:

*Goal OC-7:* Protect the scenic resources of the Mt. Shasta area.

*Policy OC-7.1:* Promote the protection of the scenic beauty of the Mt. Shasta area through appropriate zoning, development standards, and the development review process involving lands in both the City and outside the city limits. The County is encouraged to support and help implement this policy.

*Implementation Measure OC-7.1(c):* Establish and enforce standards for outdoor lighting to reduce light pollution.

*Implementation Measure OC-7.1(d):* Require undergrounding of all new utilities wherever practical. Encourage other agencies and entities to underground their facilities. Where undergrounding is impractical, aboveground lines shall be located to minimize impacts on sensitive scenic areas.

### **Existing Development Character and Landscape Quality**

The Project area is located in unincorporated Siskiyou County and with the city limits of Mt. Shasta, in an area historically known as the Strawberry Valley. The developed character of the Project area is generally low-density rural residential, with a major transportation corridor (I-5) visually influencing the visual setting in a pastoral landscape. Mt. Shasta and Black Butte provide scenic focal points from some viewing locations across the Strawberry Valley. The Strawberry Valley in the Project area provides a pleasant, pastoral setting that expresses its own sense of place, with scattered woodlots, grazing pastures, wetland areas and some retail or commercial businesses, agricultural outbuildings and architecturally diverse building forms. Higher density urban development occurs east of I-5 within the City of Mt. Shasta. Scenic vistas occur from selected locations toward Mt. Shasta, Black Butte and other natural areas in the region, but the landscape quality of the Strawberry Valley as expressed in architectural and developed features is moderate within a regional context.

### **Viewpoints and Sensitive Viewers**

#### Existing Residential Views

Residential views occur throughout the Project study area. Table 4.2-1 presents representative viewpoints from residential areas, as well as other viewpoints. Residential areas that have views of the Project are located on Hatchery Lane and West Jesse Street, (North and South) Old Stage Road, West Ream Avenue, Barr Road, and Michele Drive. There is a mobile home park, Chateau Shasta Mobile Home Park, located on South Old Stage Road. Views from this mobile home park to the Project would be very limited, with several rebuilt transmission structures visible from the development (see Viewpoint 8). The proposed substation would be screened from this area by other structures and vegetation. Although the Project viewpoints do not illustrate all possible views from residences in the area, the highest visibility of the Project from residential areas are represented by Viewpoints 1, 2, 3, 4, 5, and 8. Residences located along W. Jesse Street would have views of a new distribution. All residences are considered highly sensitive.

#### Existing Motorist Views

Motorists and passengers traveling on I-5 and local roads in proximity to the Project site, such as Old Stage Road, West A Barr Road, and Hatchery Lane, were considered. I-5 in this area is classified as an Eligible State Scenic Highway but is not a Designated State Scenic Highway, and is a part of the Volcanic Legacy Scenic Byway and designated an All American Road by the Federal Highway Administration. I-5 passes within approximately 0.2 mile of the Project site, but viewer sensitivity is reduced because of highway vehicle speeds and motorists' general attitude towards change in the landscape. Motorist views from I-5 are overwhelmingly dominated by the surrounding mountain ranges and oriented to Mt. Eddy to the west and Mt. Shasta to the east. The local roads are two-lane, dirt-shouldered roads that provide local access and services to the scattered residences and rural businesses, and are not considered touring or recreational drives. However, these roads (W. Ream Ave., W. A. Barr Rd., Hatchery Lane, S. Old Stage Rd.) do provide access (foot, bike, vehicle, etc.) to the surrounding recreational areas located in the national forest, around Lake Siskiyou and other public use recreation areas surrounding Mt. Shasta.

**Existing Recreationist Views**

Recreation activities occurring in the Project area include camping, hiking, biking, water sports (at Lake Siskiyou), and winter snow activities at Mt. Shasta Ski Park. While the region is abundant with both public and private hiking and camping facilities, there are few amenities within the visual study area. The nearest U.S. Forest Service camping facilities are almost 3.5 miles to the east at McBride Springs Camp Ground. The nearest designated hiking trails within the study area are located in the Elsa Rupp Nature Study Area along Big Springs Creek just north of the Old Stage Road/W. Jesse Street intersection. The site is owned and administered by the California Department of Fish and Wildlife. The Mt. Shasta State Fish Hatchery and Sisson Museum are also located near the nature study area. A picnic site and associated California State historical marker is also located at the intersection near the hatchery on the site of the Old Session Hotel. A marker interprets the Strawberry Valley Stage Station, which served railroad patrons between 1857 and 1886 (see Figure 4.2-2, Viewpoint 4). There are no viewing opportunities of the Project site from Mt. Shasta city parks or recreational activities within the Shasta-Trinity National Forest amenities. There are no city- or county-designated hiking or bike trails in the visual study area.

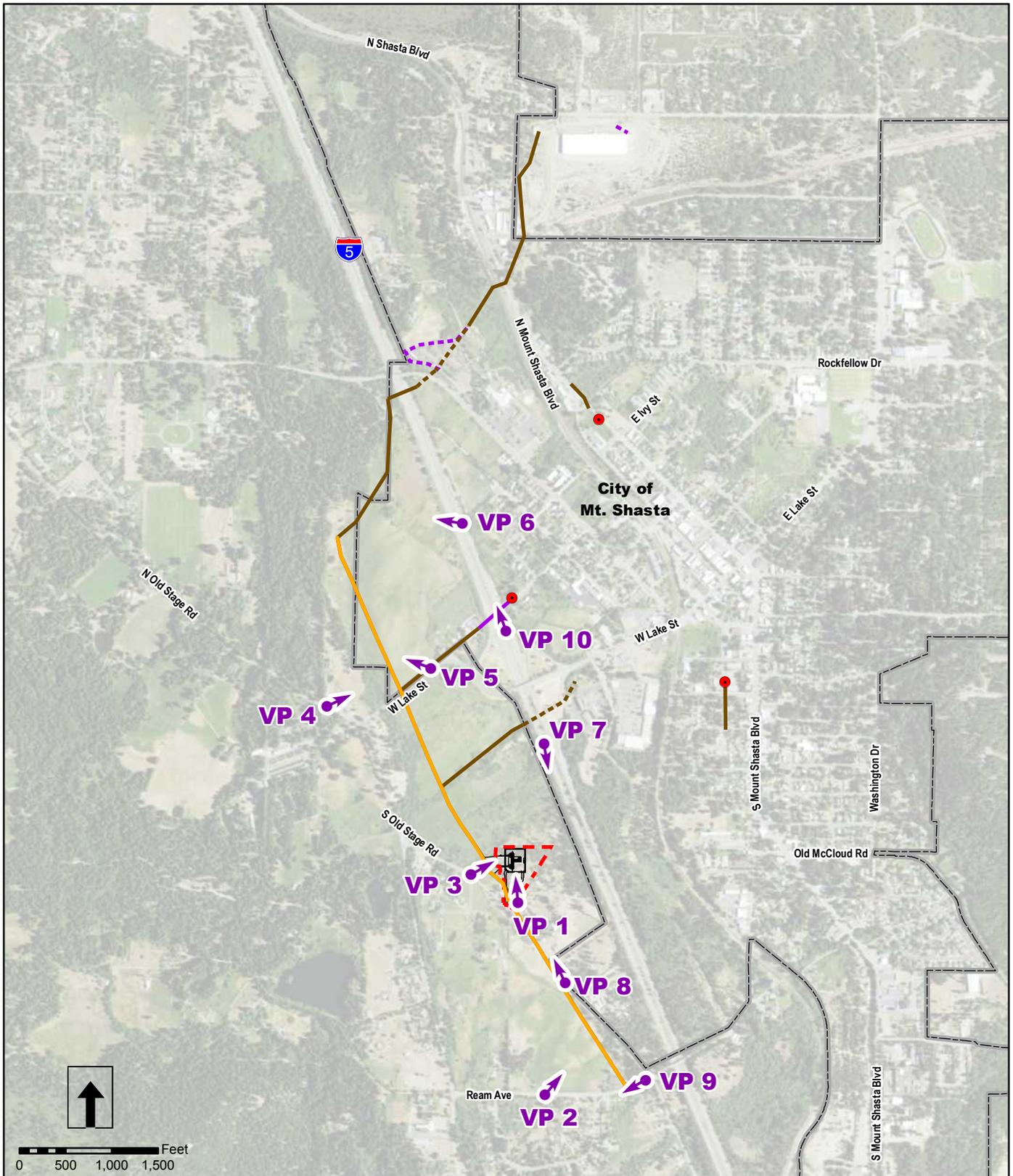
Table 4.2-1 summarizes the sensitivity and existing conditions of the representative viewpoints. Figures 4.2-1 through 4.2-6 illustrate the location and view from each Viewpoint.

**TABLE 4.2-1 PROJECT ASSESSMENT VIEWPOINTS**

VIEWPOINT #/NAME	VIEWER TYPE & SENSITIVITY	VIEWING CONDITIONS
#1 – Old Stage Road South	Residential - High	This is a representative view from a cluster of residences, located south and southeast of the proposed substation on Old Stage Rd., that currently have partially obstructed views of the existing transmission line and substation. Surrounding vegetation generally obscures direct views to Mt. Shasta and Black Butte in the direction of the Project. Landscape quality is moderate (see Appendix A for a photo of existing conditions and a Project simulation).
#2 – West Ream Ave.	Residential & Travel – High to Moderate	This is a representative view from a residential area located along W. Ream Ave. These residences have open, unobstructed scenic views of Mt. Shasta to the northeast. The existing wood pole transmission line is located in the middleground, is seen across an open pasture, and is set against residential development and evergreen overstory vegetation. Landscape quality is moderate (see Appendix A for a photo of existing conditions and a Project simulation).
#3 – Old Stage Road Central	Residential & Travel – High to Moderate	This is a representative view from Old Stage Rd. and, to a lesser extent, adjacent residences located across Old Stage Rd. The existing substation is located to the north (left of the photo), and the new substation and transmission line would be seen against evergreen overstory vegetation and residential development. Mt. Shasta would be visible in the background to the left of this view on a clear day. Landscape quality is moderate (see Appendix A for a photo of existing conditions and a Project simulation).
#4 – Strawberry Valley Stage Station Historic Site	Residential - High	Several residences located at or near the corner of Old Stage Rd. and West Lake St. view the rolling, forested foothills of the Shasta-Trinity National Forest, Mt. Shasta and the existing transmission line in a pastoral, generally open setting, with the Strawberry Valley in the middleground. This is also the site of the old stage station. Landscape quality is moderate (see Figure 4.2-2 for a photo of existing conditions).

VIEWPOINT #/NAME	VIEWER TYPE & SENSITIVITY	VIEWING CONDITIONS
#5 – West Lake Road/Hatchery Lane	Residential & Travel – High to Moderate	Motorists, recreationists and travelers going east on W. Lake Rd. and residences located on Hatchery Ln. generally view the existing transmission line across a pasture against a forested backdrop (Elsa Rupp Nature Study Area) within the valley. The transmission line also crosses the road in this area. Landscape quality is moderate (see Figure 4.2-3 for a photo of existing conditions).
#6 – West from northbound I-5	Travel Corridor - Moderate	Views of the existing transmission line from I-5, the Volcanic Legacy Scenic Byway All American Road, are very brief and generally screened. The transmission line portion of the Project would be seen across a pastoral landscape and backdropped against the evergreen forest and residential development. Landscape quality is moderate (see Appendix A for a photo of existing conditions and a Project simulation).
#7 – Volcanic Legacy Byway South	Travel Corridor - Moderate	This viewpoint represents the typical viewing condition from the Volcanic Legacy Scenic Byway All American Road near the proposed substation. Dense, intervening (primarily evergreen) vegetation would screen views of the Project in this area, from the West Lake Road overpass south. Landscape quality is moderate (see Figure 4.2-5 for a photo of existing conditions).
#8 – Old Stage Road Corridor	Residential & Travel – High to Moderate	This is a representative view along the Old Stage Road corridor. Motorists, recreationists, and residences would view the Project in a developed, low density residential, pastoral landscape. Background views of the Shasta-Trinity National Forest and City of Mt. Shasta Scenic View Shed Area occur to the northwest in the context of this setting (see Figure 4.2-6 for a photo of existing conditions).
#9 - Ream/Old Stage Road	Travel – Moderate	This view from the intersection of Old Stage Rd. and West Ream Ave. represents typical conditions where travelers using this corridor would get a longer duration view of the Project on its extreme southern end (southern-most replacement pole). The Project would be generally screened in the context of a low density residential and a pastoral setting. Landscape quality is moderate (see Figure 4.2-7 for a photo of existing conditions).
#10 - North from northbound I-5	Travel Corridor – Moderate	Views of the new overhead crossing of the distribution line from I-5, the Volcanic Legacy Scenic Byway All American Road, are very brief and generally screened. This view represents northbound I-5 views. Landscape quality is moderate (see Appendix A for a photo of existing conditions and a Project simulation).

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LEGEND	
	TRANSMISSION LINE
	EXISTING OVERHEAD DISTRIBUTION
	EXISTING UNDERGROUND DISTRIBUTION
	PROPOSED OVERHEAD DISTRIBUTION
	PROPOSED UNDERGROUND DISTRIBUTION
	INSTALL 12.47 TO 4.16 KV STEPDOWN
	PROPOSED LASSEN SUBSTATION SITE
	CITY LIMITS

**FIGURE 4.2-1  
PROJECT VIEWPOINT  
LOCATIONS**

**PACIFICORP  
LASSEN SUBSTATION  
PROJECT**

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**FIGURE 4.2-2 VIEWPOINT 4: STRAWBERRY VALLEY STATION HISTORIC SITE  
LOOKING WEST**



**FIGURE 4.2-3 VIEWPOINT 5: EASTBOUND W. LAKE ROAD/HATCHERY LANE  
LOOKING NORTHWEST**



**FIGURE 4.2-4**      **VIEWPOINT 7: SOUTHBOUND VOLCANIC LEGACY BYWAY  
LOOKING SOUTH**



**FIGURE 4.2-5**      **VIEWPOINT 8: NORTHBOUND OLD STAGE ROAD CORRIDOR  
LOOKING NORTHWEST**



**FIGURE 4.2-6 VIEWPOINT 9: W. REAM AVE/OLD STAGE ROAD LOOKING WEST**



### **4.2.3 Environmental Impacts**

The visibility of Project contrasts from each identified viewpoint were compared with CEQA criteria to determine overall impacts and CEQA significance. Initially, contrasts were compared with visibility to determine impact levels. The presence or absence of CEQA significance criteria determined CEQA significance. High impacts where CEQA criteria were present would result in a significant impact.

Appendix G of CEQA Guidelines defines the criteria and areas of concern regarding a project's potential impact on visual resources by considering if a project would:

- a) Have a substantial adverse effect on a scenic vista;
- b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State Scenic Highway;
- c) Substantially degrade the existing visual character or quality of the site and its surroundings; and
- d) Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

The matrix presented in Table 4.2-2 provides general guidance for determining the significance of visual impacts created by the Project. The significance of impacts, as described by CEQA, were determined by comparing impact levels (high, moderate, low) with CEQA significance criteria.

For example, under CEQA Guidelines, the effects of the Project on scenic vistas must be taken into account. In order for significant, adverse effects on a scenic vista to take place, the affected viewshed must be of above average or better visual quality and/or have notable, open unobstructed views to rare or unique scenery, such as mountains, river valleys, scenic water features or other valued landscapes.

Also, the visual impact of the Project must be moderate or high and dominate the viewshed of sensitive viewers. Areas determined to have high impacts were studied in more detail to confirm if there were conditions where significant CEQA defined impacts occur (e.g., scenic vistas, high scenic quality).

**TABLE 4.2-2 CEQA SIGNIFICANCE THRESHOLDS**

CEQA CRITERIA PRESENT?	IMPACT LEVEL		
	Low	Moderate	High
Yes	Adverse but Less Than Significant	Adverse but Less Than Significant	Significant
No	Less than Significant	Less Than Significant	Adverse but Less Than Significant

**Significant:** Would likely cause a substantial long-term and adverse effect on landscape character, scenic quality or visual integrity of an existing viewshed due to the contrast between the Project and the level of existing scenic conditions. Significant impacts can be mitigated to a level that is not significant or can be avoided altogether with feasible mitigation. Without mitigation, the impact could exceed environmental thresholds.

**Adverse but Less than Significant:** Would create a noticeable but not substantial change in landscape character, scenic quality or visual integrity of existing scenic conditions. Adverse but Less than Significant impacts are perceived as negative but do not exceed CEQA thresholds.

**Less Than Significant:** May or may not be perceptible, and is considered a minor alteration in the context of existing landscape characteristics and view opportunity.

Visual contrasts for the transmission rebuild component of this Project would primarily be in the form of structure contrasts, with an incremental change in the scale and dominance of the poles at each pole site (from a 69 kV structure to a 115 kV structure, energized at 69 kV). The increased bulk and height of the structures and corresponding increased distribution conductor size would generally create weak structure contrasts. No overstory vegetation or clearing of shrub vegetation would typically occur, so minimal to no vegetation contrasts would result from the transmission component of the Project. When access road construction does occur, it would be in areas of low-growing ground cover, thus resulting in weak vegetation contrasts. Similarly, no substantial grading efforts would occur during pole replacement, so no landform contrasts would result along the corridor. Substation clearing and grading, however, would result from the Project. As the proposed new substation site is located on generally level terrain, landform contrasts would be weak. Vegetation contrasts would be the most substantial visual change, due to the clearing of some large trees on the site. Structure contrasts would be moderate, due to the presence of the existing residential development, transmission and distribution lines, and substation. The decommissioning of the existing substation would reduce the visual effects of associated infrastructure, but new construction would displace the visual influence of these facilities in the pastoral valley landscape. This would result in moderate overall visual contrasts in the area.

**TABLE 4.2-3 VIEWPOINT IMPACT SUMMARY**

VIEWPOINT #/NAME	CEQA CRITERIA PRESENT?	VISUAL IMPACTS AND SIGNIFICANCE
#1 - Old Stage Road South	No	Although the existing substation is visible from this residential area, vegetation substantially screens views towards it. The introduction of a new substation, the clearing of existing screening vegetation, removal of the existing structure, and introduction of contrasting structural elements in the immediate foreground and foreground of high sensitivity viewers would create moderate to strong contrasts and high impacts. The Project would require minimal lighting for security purposes at the Lassen Substation site; however, no new significant light sources would be introduced. Lighting would be directed downward at the site. Impacts would be <i>High and Adverse, but Less Than Significant</i> .
#2 – West Ream Ave.	Yes (a, c)	Open, unobstructed scenic views of Mt. Shasta occur from this viewpoint. Contrasts created as a result of the Project, however, would be weak and seen in the foreground or middleground, and primarily occur as a result of additional height and bulk of the transmission line poles. Because the Project would not substantially differ from the existing visual condition, and the views of Mt. Shasta would not be obstructed or substantially altered, impacts would be <i>Moderate and Less Than Significant</i> .
#3 – Old Stage Road Central	No	Vegetation contrasts in this view would be strongest, with some larger overstory vegetation removal altering the landscape element. Additional substation and transmission line infrastructure would moderately contrast with the existing substation and lines from this location. Views from the road would be brief, and residential impacts would be moderate due to existing development within the viewshed. Decommissioning of the existing substation would reduce the overall impacts of the site. Impacts would be <i>Moderate and Less Than Significant</i> from this Viewpoint.
#4 – Old Stage Road North	Yes (a, c)	Visual contrasts would be seen in the foreground from this viewpoint, and would be weak due to the slight increase in scale and dominance of several transmission structures. Vegetation form, line and texture are fairly complex from this view, and the rebuilt line would be seen from a slightly superior viewing position. The scenic view across the Strawberry Valley would not substantially differ from the existing visual condition, and the views of Mt. Shasta would not be obstructed or substantially altered. Impacts would be <i>Moderate and Less Than Significant</i> .
#5 - West Lake Road/Hatchery Lane	No	Visual contrasts would also be weak due primarily to structure contrasts, and would be seen in the immediate foreground and foreground from the residences and briefly by motorists and travelers using Hatchery Lane. Impacts would be <i>Moderate and Less Than Significant</i> from this Viewpoint.
#6 – Volcanic Legacy Byway North	Yes (b)	Views from the highway would be very brief and not in the line of sight of motorists. When seen, weak contrasts would be viewed generally in the middleground viewing condition. The level of visual change from this scenic corridor would result in <i>Low and Less Than Significant Impacts</i> .
#7 - Volcanic Legacy Byway South	Yes (b)	From this viewpoint location on I-5, neither the substation component nor the transmission component would be seen due to substantial evergreen vegetation screening. <i>No impacts</i> on motorists would occur from this location.

VIEWPOINT #/NAME	CEQA CRITERIA PRESENT?	VISUAL IMPACTS AND SIGNIFICANCE
#8 - Old Stage Road Corridor	No	Residences, commuters, bicyclists, and others users of the Old Stage Road corridor would view the Project along the southwest side of the road, and see an incremental change in the structure bulk, mass, and dominance. Weak structure contrasts would occur in the immediate foreground for moderate to high sensitivity viewers, resulting in <i>Moderate</i> and <i>Less Than Significant Impacts</i> .
#9 – W. Ream Ave./Old Stage Road	No	Residences, commuters, bicyclists, and others users of the Old Stage Rd. or West Ream Ave. corridor would view the Project as it crosses the road, and see an incremental change in the structure bulk, mass, and dominance. From this viewpoint, the Project would generally be screened by vegetation, and the southern-most replacement structure would be visible on the south side of the road. Weak structure contrasts would occur in the immediate foreground for moderate to high sensitivity viewers, resulting in <i>Moderate</i> and <i>Less Than Significant Impacts</i> .
#10 - Volcanic Legacy Byway –Norbound View of New Distribution	Yes (b)	Views from the highway would be very brief; with new distribution conductor wires and modified distribution structures that are similar in scale dominance being viewed in the immediate foreground. Nearby residences would have long duration views; however, weak contrasts would occur. The level of visual change from the scenic corridor and residential areas would result in <i>Low</i> and <i>Less Than Significant Impacts</i> .

Would the Project:

**a) Have a substantial adverse effect on a scenic vista?**

**Less Than Significant Impact:** There are no *designated* scenic vistas as identified in the Siskiyou County General Plan or City of Mt. Shasta General Plan. However, scenic vistas do occur from key Viewpoints of areas generally identified as visual resources in these plans, such as Mt. Shasta and Black Butte. However, because of the locations of these vistas, the visual contrasts created by the Project, the difference in scale and dominance of the Project, the distance at which the contrasts are viewed, and preservation of the lines of sight to these resources, the Project would not adversely affect these scenic vistas, and no mitigation is required.

**b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**Less Than Significant Impact:** As stated above under Environmental Setting, Section 4.2.2 of this PEA, the site is located in an area that is considered a Scenic Highway Corridor. Picturesque views of Mt. Shasta can be seen from the portion of I-5 extending from the City of Weed to SH 89. This portion of I-5 has been designated as part of the Volcanic Legacy Scenic Byway by the Federal Highway Administration, and is identified as a Scenic Highway Corridor in the Siskiyou County and City of Mt. Shasta General Plans. Though the proposed Project is located within 0.25 mile of this scenic byway, the Project would not compromise scenic views for freeway travelers, nor conflict with Objectives 2 or 4 of the Scenic Highways Element of the Siskiyou County General Plan, since PacifiCorp, as required by the General Plan, has committed to designing the Project in a manner that would be compatible with the existing environment. Additionally, the transmission line would be built within an existing utility corridor. There are no scenic resources, such as significant trees, rocks, historic buildings or prominent topographic features that would be

degraded due to the Project. In relative context of the diminutive scale of the proposed Project to the intervening terrain and surrounding vegetation, the Project would be a middleground view and not be obvious, dominate or even attract intermittent views from the highway. The addition of a new overhead distribution line conductor would be briefly visible to highway travelers and would not be a dominant feature in the landscape. Therefore, no substantial adverse effects on scenic resources would occur and no mitigation is required.

**c) Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less Than Significant Impact:** The Project site is characterized as open grassland and pasture surrounded by mixed coniferous forest and oak woodland vegetation. The visual character and quality of the area's landscape is pleasing, yet common. The substation would be screened from most directions by the existing vegetation, with direct views primarily from vehicles passing the site on South Old Stage Rd. The substation site would consist of structures of 15 to 20 feet in height, with some reaching up to 40 feet in height, but contrasts would be moderate and would not disrupt or dominate the existing viewshed. The existing visual character of the low density, pastoral landscape in the substation area and along the existing transmission line is already influenced by the existing facilities; therefore, the character or quality of the site and its surroundings would not be substantially degraded by implementation of the proposed Project. The addition and modification of overhead distribution lines and modified structures would result in minimal visual change in the setting where these features currently exist. Therefore, no mitigation is required.

**d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**Less Than Significant Impact:** The substation would require minimal lighting for security purposes, activated by motion sensors; however, no new significant light sources would be introduced. Lighting would be directed downward at the site. There would be no permanent additional light sources as a result of the Project, and therefore, no substantial impacts related to light and glare in the area would occur. Routine construction, operation, and maintenance work would be performed during the day. However, there may be instances when nighttime emergency maintenance is necessary, and lighting for security and to maintain a safe working environment would be required. In these instances, the lighting would be temporary and directed toward the work areas requiring illumination and away from motorists and residences. Therefore, impacts would be less than significant and no mitigation is required.

### 4.3 Agricultural and Forestry Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Conflict with existing zoning for, or cause rezoning of, forest land as defined in Public Resources Code section 4526, or timberland zoned Timberland Production as defined by Government Code section 51104(g)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Result in the loss of forest land or conversion of forest land to non-forest land?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

#### 4.3.1 Methodology

The proposed Project site analysis involved review of the Siskiyou County General Plan and the City of Mt. Shasta General Plan. The analysis also included review of aerial photographs and relevant maps, including the California Department of Conservation (DOC) Farmland Mapping and Monitoring Program (FMMP) map, and Siskiyou County Land Use Designation and Zoning maps. Field visits to the site were also conducted to gather relevant information.

#### 4.3.2 Environmental Setting

##### Regulatory Framework

##### Williamson Act

The California Land Conservation Act, also known as the Williamson Act, was adopted in 1965 in order to encourage the preservation of the state's agricultural lands and to prevent their premature conversion to urban uses. In order to preserve these uses, the Act established an agricultural preserve contract procedure by which any county or city within the state taxes landowners at a lower rate, using a scale based on the actual use of the land for agricultural purposes, as opposed to its unrestricted market value. In return, the owners guarantee that these properties remain under agricultural production for a ten-year period. The contract is renewed automatically unless the owner files a notice of non-renewal. In this manner, each agricultural preserve contract (at any given date) is always operable at least nine years into the future. Currently, approximately 70 percent of the state's

prime agricultural land is protected under this Act. The Williamson Act sets up the following land use categories:

*Williamson Act – Prime Agricultural Land*

Land that is enrolled under California Land Conservation Act contract and meets any of the following criteria (as set forth under California Government Code Section 51201):

- 1) Land that qualifies for rating as class I or class II in the Natural Resources Conservation Service land use capability classifications;
- 2) Land that qualifies for rating 80 to 100 in the Storie Index Rating;
- 3) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the U.S. Department of Agriculture;
- 4) Land planted with fruit or nut-bearing trees, vines, bushes or crops that have a nonbearing period of less than five years and that will normally return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than two hundred dollars per acre;
- 5) Land that has returned from the production of unprocessed agricultural plant production and has an annual gross value of not less than two hundred dollars per acre for three of the previous five years.

*Williamson Act – Non-Prime Agricultural Land*

This classification includes land that is enrolled under a California Land Conservation Act contract and does not meet any of the criteria for classification as Prime Agricultural Land. Non-Prime land is defined as Open Space Land of Statewide Significance under the California Open Space Subvention Act (see California Government Code Section 16143), and may be identified as such in other documents. Most Non-Prime Land is in agricultural uses, such as grazing or non-irrigated crops. However, Non-Prime Land may also include other open space uses that are compatible with agriculture and consistent with local general plans.

Siskiyou County Zoning Ordinance

While the County has not designated land uses on a general plan map, it does use zoning to regulate how land can be used. County zoning districts provide more detailed regulations about the type of uses that can occur within land use designations.

City of Mt. Shasta General Plan

According to the City of Mt. Shasta General Plan, Open Space and Conservation Element, agriculture has been an important economic activity since the early 1900s; however, in recent years agriculture has become limited in both diversity and the extent of land use (City of Mt. Shasta 2007). Figure 3.2, Open Space Lands, illustrates that the Project site (substation, transmission and distribution lines) is not located in an area designated in the City of Mt. Shasta General Plan as National Forest Land, Timber Preserves, Parcels with Potential for Prime Farm Soils, Agriculture Preserves, or other Open Spaces uses (City of Mt. Shasta 2007).

**Existing Conditions**

Agricultural and forestry resources are both found in Siskiyou County. Field crops, such as alfalfa, hay, wheat and forage, provide the highest proportion of agricultural income to the county. Agriculture in the Project area during the early 1900s included the cultivation of strawberries, apples, peaches, and cherries. Currently, however, agricultural operations are limited in both diversity and the

extent of land use. Limited grazing of livestock and a few orchards are present in the area. The proposed Project would be located on private property that is not currently, nor historically, used for agriculture.

Private woodland holdings account for the largest individual land use category in Siskiyou County, an estimated 55.3 percent of the area. Commercial timber stands include: ponderosa pine, sugar pine, western white pine, Jeffrey pine, Douglas fir, white fir, red fir, incense cedar, mountain hemlock, Brewer spruce, lodgepole pine and knobcone pine. In 2003, Siskiyou County ranked second among the State's counties in timber volume (million board feet), total agricultural value (including timber), timber value, and timber percentage of total agricultural value.

Managed timber resources in the Project area are located on National Forest System lands and private lands. National Forest timberlands are located primarily on Rainbow Ridge, northeast of Springhill and northeast of the I-5/SH 89 interchange. Isolated areas of federal timber are located south and southeast of Black Butte. Private timber stands are also located on Rainbow Ridge. Small tracts of timber are found in the vicinity of Abrams Lake Road and along Big Springs Creek south of Lassen Lane.

### Farmland Classification

To characterize the environmental baseline for agricultural resources, Important Farmland Maps produced by the California DOC FMMP were reviewed. The DOC applies the Natural Resources Conservation Service (NRCS) soil classifications to identify agricultural lands. These designated agricultural lands are included in the Important Farmland Maps used in planning for the present and future of California's agricultural land resources. The FMMP was established in 1982 to assess the location, quality, and quantity of agricultural lands and the conversion of these lands. The FMMP provides analysis of agricultural land use and land use changes throughout California. The DOC has a minimum mapping unit of 10 acres, with parcels that are smaller than ten acres being absorbed into the surrounding classifications.

The list below provides a description of all the categories mapped by the DOC (DOC 2004). Collectively, lands classified as Prime Farmland, Farmland of Statewide Importance, and Unique Farmland are referred to as Farmland (DOC 2004).

**Prime Farmland:** Farmland that has the best combination of physical and chemical features able to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

**Farmland of Statewide Importance:** Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture. Land must have been used for irrigated agricultural production at some time during the four years prior to the mapping date.

**Unique Farmland:** Farmland of lesser quality soils used for the production of the State's leading agricultural crops. This land is usually irrigated, but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Land must have been cropped at some time during the four years prior to the mapping date.

**Farmland of Local Importance:** Land of importance to the local agricultural economy as determined by each county's board of supervisors and a local advisory committee. Farmland of Local Importance in Siskiyou County is defined as:

- Farmlands that include dryland or sub-irrigated hay and grain and improved pasture forage species (these dry farmed lands commonly have inclusions of uncultivated shallow, rocky, or steep soils).
- Farmlands presently irrigated but which do not meet the soil characteristics of Prime Farmland or Farmland of Statewide Importance.
- Areas currently shown as Prime Agricultural Land in the Siskiyou County General Plan;
- Areas under contract as Agricultural Preserves in Siskiyou County (currently mapped only for the Scott-Shasta-Butte Valley and Tulelake soil survey areas).
- Other agricultural land of significant importance to the county (currently mapped only for the Scott-Shasta-Butte Valley and Tulelake soil survey areas).
- Areas previously designated by soil characteristics as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance that have since become idle.
- Lands enrolled in the U.S. Department of Agriculture's Conservation Reserve Program.

**Grazing Land:** Land on which the existing vegetation is suited to the grazing of livestock. This category was developed in cooperation with the California Cattlemen's Association, University of California Cooperative Extension, and other groups interested in the extent of grazing activities. The minimum mapping unit for Grazing Land is 40 acres.

**Urban and Built-up Land:** Land occupied by structures with a building density of at least one unit to 1.5 acres, or approximately six structures to a ten-acre parcel. This land is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes.

**Other Land:** Land not included in any other mapping category. Common examples include low density rural developments; brush, timber, wetland, and riparian areas not suitable for livestock grazing; confined livestock, poultry or aquaculture facilities; strip mines and borrow pits; and water bodies smaller than 40 acres. Vacant and nonagricultural land surrounded on all sides by urban development and greater than 40 acres is mapped as Other Land.

The most recent data from the California Department of Conservation's (CDC) California Farmland Conversion Report 2010-2012, is illustrated in Table 4.3-1. Table 4.3-1 shows the acres of agricultural land in Siskiyou County in 2010 and 2012, as well as the amount of conversion of land from agricultural use to non-agricultural use.

The proposed Project is located on land classified by DOC Important Farmland Maps as Farmland of Local Importance and Other Land. The land is not being actively used for agricultural production.

#### Forest Land Classification

Forest land is land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Timberland is land, other than land owned by the federal government and land designated by the State Board of Forestry as experimental forest land, which is available for, and capable of, growing a crop of trees of any commercial species used to produce lumber and other forest products.

**TABLE 4.3-1 AGRICULTURAL LAND USE CONVERSION FROM 2008-2010 IN SISKIYOU COUNTY**

Land Use Category	TOTAL ACRES INVENTORIED		2010-2012 ACREAGE CHANGES		
	2010	2012	Acres Lost (-)	Acres Gained (+)	Net Acreage Changed
Prime Farmland	74,245	74,793	255	803	548
Farmland of Statewide Importance	26,728	27,304	55	631	576
Unique Farmland	33,584	34,837	57	1,310	1,253
Farmland of Local Importance	624,523	619,545	5,539	561	-4,978
<b>Important Farmland Subtotal</b>	<b>759,080</b>	<b>756,749</b>	<b>5,906</b>	<b>3,305</b>	<b>-2,601</b>
Grazing Land	387,885	389,757	473	2,345	1,872
<b>Agricultural Land Subtotal</b>	<b>1,146,965</b>	<b>1,146,236</b>	<b>6,379</b>	<b>5,650</b>	<b>-729</b>

Source: CDC 2015.

### 4.3.3 Environmental Impacts

Would the Project:

- a) **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?**

**No Impact.** The Project site is not located within an area identified as Farmland by the FMMP, and therefore, would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to nonagricultural uses.

- b) **Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

**No Impact.** The Project site is zoned for rural residential and agricultural uses, and the proposed Project would not result in a conflict with any agricultural zone districts or uses. The Project site is not restricted by a Williamson Act contract.

- c) **Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC section 12220(g)), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**

**No Impact.** The proposed Project is a use permit to allow for a new electrical substation facility on lands zoned for rural residential and non-commercial agricultural uses. No rezoning of forest lands or timberland zoned Timberland Production is proposed.

- d) **Result in the loss of forest land or conversion of forest land to non-forest use?**

**Less than Significant Impact.** Due to the minimal amount of land needed for the proposed Project is not anticipated that the Project would result in a substantial loss of forest lands to a non-

forest use. Prior to earth-disturbing activities that may result in the removal of trees, PacifiCorp will need to adhere to the requirements of the Z'berg-Nejedly Forest Practice Act of 1973. Timber operations involved with the Project would need to be approved by Cal Fire, and a Timber Conversion Permit may be required. If so, conditions of approval would be incorporated into the use permit to ensure that PacifiCorp adheres to State regulations.

- e) **Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?**

**Less than Significant Impact.** Due to the minimal amount of land needed for the proposed Project, it is not anticipated that the Project would result in a substantial loss of forest land or farmland (Farmland of Local Importance) or conversion to a non-forest or non-agricultural use.

## 4.4 Air Quality and Greenhouse Gas Emissions

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
<b>Air Quality</b>				
a) Conflict with or obstruct implementation of the applicable air quality plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state AAQS (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
d) Expose sensitive receptors to substantial pollutant concentration?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Create objectionable odors that would affect a substantial amount of people?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
<b>Greenhouse Gas Emissions</b>				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.4.1 Introduction

The purpose of the air quality analysis is to evaluate the potential for impacts associated with construction and operation of the Project. The air quality analysis: 1) presents the regulatory framework; 2) provides an overview of the technical methodology used in collecting baseline conditions and evaluating impacts; 3) examines the affected environment with respect to air quality; 4) describes the potential impact on air quality from construction and operation of the Project; 5) evaluates the level of potential impacts on air quality from construction and operation of the Project; and 6) presents specifically recommended mitigation measures, if needed, to reduce potential impacts.

Recent regulatory action on both the federal and State level addresses emissions of greenhouse gases (GHG) and potential global climate change impacts. Under CEQA guidelines, global climate change is addressed as a cumulative impact.

## 4.4.2 Environmental Setting

### Climate and Meteorology

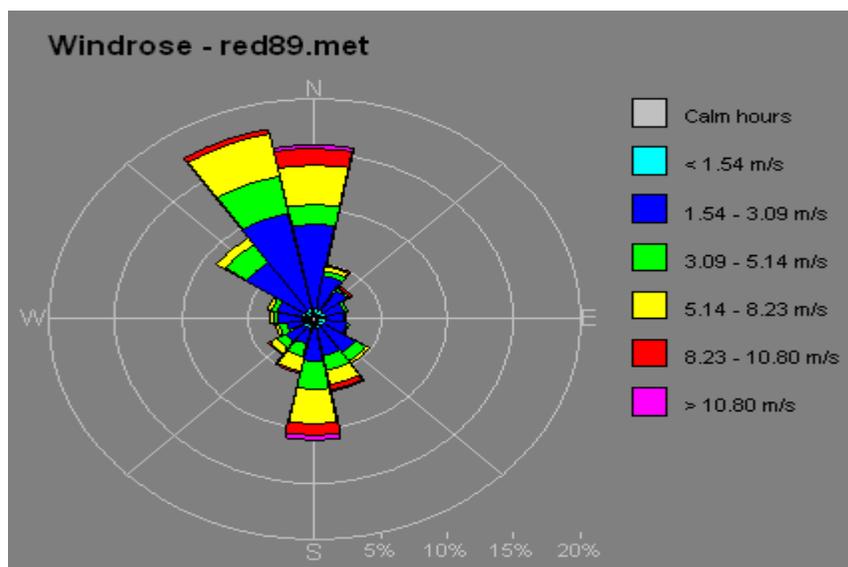
The climate of the Northeast Plateau is dominated by the strength and location of a semi-permanent, subtropical, high-pressure cell over the northeastern Pacific Ocean known as the Eastern Pacific high-pressure cell, with terrain variations creating various microclimates. The existence of mountains and hills within the basin is responsible, in large part, for the wide variations of rainfall, temperatures, and localized winds that occur throughout the region. Due to the position of the Eastern Pacific high-pressure cell, winter storms occur within the study area, and a bulk of the precipitation within the region occurs during this winter storm period. Annual rainfall is lowest in the valleys, higher in the foothills, and highest in the mountains. Weather systems in the region usually result in strong winds and unstable air masses, which lead to increased air dispersion. Dry, warm conditions are characteristic of the summer months, although thunderstorms are not uncommon.

Airflow patterns in the region are predominantly northwesterly in the spring and summer; however, seasonal variations do occur. Regional airflow patterns affect air quality by directing pollutants downwind of sources. Localized meteorological conditions, such as light winds and shallow vertical mixing, as well as topographical features, such as surrounding mountain ranges, create areas of high pollutant concentrations by hindering dispersal.

Data from the Western Regional Climate Center (WRCC 2015) indicate that climate data were measured at Mt. Shasta from July 1948 through December 2010. These data are representative of the region. The mean temperature for the Mt. Shasta station is 49.6 degrees Fahrenheit (°F), and the mean annual precipitation is 5.48 inches. Annual temperatures in the Project area range from the mid-30s °F in winter to the mid-80s °F in summer (WRCC 2015). January is the coldest month, with an average minimum temperature of 34.4°F. July is the warmest month, with an average maximum temperature of 84.9°F. The mean precipitation measured at the Mt. Shasta station is 39.94 inches.

Figure 4.4-1 presents a wind rose for Redding, which is the nearest location to the site with processed meteorological data. The wind rose shows the prevailing winds in the region.

**FIGURE 4.4-1 REDDING WIND ROSE**



## Regulatory Framework

The USEPA is responsible for enforcing the Federal Clean Air Act (CAA) of 1970 and its 1977 and 1990 Amendments. Under the CAA, the USEPA established the National Ambient Air Quality Standards (NAAQS), which identify the emission thresholds for criteria pollutants.

Criteria pollutants regulated under these standards include ozone (O<sub>3</sub>), nitrogen dioxide (NO<sub>2</sub>), carbon monoxide (CO), respirable particulate matter (PM<sub>10</sub>), fine particulate matter (PM<sub>2.5</sub>), and sulfur dioxide (SO<sub>2</sub>). O<sub>3</sub> is not a directly emitted pollutant, but is formed through reactions in the atmosphere between ozone “precursors” (oxides of nitrogen [NO<sub>x</sub>] and reactive organic gases [ROG]) catalyzed by the effects of sunlight. The USEPA classifies areas as “attainment,” “nonattainment,” or “unclassified” depending on whether ambient air quality data collected in the area indicate that the area shows compliance with the NAAQS (attainment), shows noncompliance with the NAAQS (nonattainment), or whether there are insufficient data to make a determination of the area’s classification relative to the NAAQS (unclassified).

Under the CAA, states have the authority to regulate air quality, and to establish separate air quality standards that are at least as stringent as the NAAQS. The California ARB has established the California Ambient Air Quality Standards (CAAQS) under the California Clean Air Act. The NAAQS represent maximum acceptable concentrations that generally may not be exceeded more than once per year, except the annual standards, which may never be exceeded. The CAAQS represent maximum acceptable pollutant concentrations that are not to be equaled or exceeded. The NAAQS and CAAQS are summarized in Table 4.4-1.

The USEPA has transferred a number of responsibilities to the states and, in most cases, regional air quality management districts. The Lassen Substation Project would be in the southern portion of Siskiyou County, which is within the Northeast Plateau Air Basin. Within Siskiyou County, the regulatory agency with authority to regulate air quality is the Siskiyou County Air Pollution Control District (SCAPCD).

The Northeast Plateau Air Basin is classified as attainment/unclassified for the NAAQS for all criteria pollutants. The air basin is designated as nonattainment-transitional for the CAAQS for O<sub>3</sub> (indicating that the air basin is close to attaining the standard), and attainment/unclassified for the CAAQS for all other criteria pollutants.

**TABLE 4.4-1 NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS**

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS	NATIONAL STANDARDS <sup>a</sup>	
			Primary <sup>b,c</sup>	Secondary <sup>b,d</sup>
Ozone (O <sub>3</sub> )	8-hour	0.070 ppm (137 µg/m <sup>3</sup> )	0.075 ppm (147 µg/m <sup>3</sup> )	Same as primary
	1-hour	0.09 ppm (180 µg/m <sup>3</sup> )	—	—
Carbon monoxide (CO)	8-hour	9.0 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )	—
	1-hour	20 ppm (23 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )	—
Nitrogen dioxide (NO <sub>2</sub> )	Annual	0.030 ppm (56 µg/m <sup>3</sup> )	0.053 ppm (100 µg/m <sup>3</sup> )	Same as primary
	1-hour	0.18 ppm (338 µg/m <sup>3</sup> )	—	—
Sulfur dioxide (SO <sub>2</sub> )	24-hour	0.04 ppm (105 µg/m <sup>3</sup> )	—	—

POLLUTANT	AVERAGING TIME	CALIFORNIA STANDARDS	NATIONAL STANDARDS <sup>a</sup>	
			Primary <sup>b,c</sup>	Secondary <sup>b,d</sup>
PM <sub>10</sub>	3-hour	—	—	0.5 ppm (1,300 µg/m <sup>3</sup> )
	1-hour	0.25 ppm (655 µg/m <sup>3</sup> )	0.075 ppm (196 µg/m <sup>3</sup> )	—
	Annual	20 µg/m <sup>3</sup>	—	—
PM <sub>2.5</sub>	24-hour	50 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Same as primary
	Annual	12 µg/m <sup>3</sup>	12.0 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
Lead	24-hour	—	35 µg/m <sup>3</sup>	Same as primary
	Rolling 3-month period	—	0.15 µg/m <sup>3</sup>	Same as primary
	Calendar Quarter	—	1.5 µg/m <sup>3</sup>	Same as primary
	30-day average	1.5 µg/m <sup>3</sup>	—	—
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m <sup>3</sup> )	—	—
Sulfates	24-hour	25 µg/m <sup>3</sup>	—	—
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m <sup>3</sup> )	—	—

Notes:

- (a) Standards other than the 1-hour ozone, 24-hour PM<sub>10</sub>, 24-hour PM<sub>2.5</sub>, and those based on annual averages are not to be exceeded more than once a year. The 8-hour ozone national standard has replaced the 1-hour ozone national standard.
- (b) Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis. [ppm = parts per million; µg/m<sup>3</sup> = micrograms per cubic meter]
- (c) Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health. Each state must attain the primary standards no later than three years after that state's implementation plan is approved by the USEPA.
- (d) Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

The SCAPCD has adopted rules and regulations to regulate sources of air emissions within Siskiyou County. Most of the regulations address emissions from stationary sources and require permits to be issued for stationary sources. The SCAPCD has also adopted regulations governing agricultural burning within Siskiyou County. There are no specific local regulations governing construction projects within Siskiyou County.

In addition to regulations governing criteria pollutants, both the USEPA and the State of California have adopted regulations governing emissions of GHG. On April 17, 2009, the USEPA issued its proposed endangerment finding for GHG emissions. On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHG under section 202(a) of the Clean Air Act:

**Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases—carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>)—in the atmosphere threaten the public health and welfare of current and future generations.

**Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

The endangerment findings do not themselves impose any requirements on industry or other entities.

Mandatory GHG Reporting Rule. On March 10, 2009, in response to the FY2008 Consolidated Appropriations Act (H.R. 2764; Public Law 110–161), the USEPA proposed a rule that requires

mandatory reporting of GHG emissions from large sources in the United States. On September 22, 2009, the Final Mandatory Reporting of Greenhouse Gases Rule was signed, and was published in the Federal Register on October 30, 2009. The rule became effective on December 29, 2009. The rule will collect accurate and comprehensive emissions data to inform future policy decisions.

The USEPA is requiring suppliers of fossil fuels or industrial GHG, manufacturers of vehicles and engines, and facilities that emit 25,000 metric tons or more per year of GHG emissions to submit annual reports to the USEPA. The gases covered by the proposed rule are CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFC, PFC, SF<sub>6</sub>, and other fluorinated gases, including nitrogen trifluoride (NF<sub>3</sub>) and hydrofluorinated ethers (HFE).

Corporate Average Fuel Economy Standards. The federal Corporate Average Fuel Economy (CAFE) standard determines the fuel efficiency of certain vehicle classes in the United States. In 2007, as part of the Energy and Security Act of 2007, CAFE standards were increased for new light-duty vehicles to 35 miles per gallon by 2020. In May 2009, President Obama announced plans to increase CAFE standards to require light-duty vehicles to meet an average fuel economy of 35.5 miles per gallon by 2016. On April 1, 2010, the U.S. Department of Transportation and the USEPA established historic new federal rules that set the first-ever national GHG emissions standards and will significantly increase the fuel economy of all new passenger cars and light trucks sold in the United States. The standards set a requirement to meet an average fuel economy of 34.1 miles per gallon by 2016. The USEPA and U.S. Department of Transportation are in the process of extending the light-duty vehicle standards to further reduce GHGs for model years 2017 – 2025. Furthermore, as of December 10, 2014, the agencies have adopted GHG emission standards for heavy-duty engines and vehicles.

The following subsections describe regulations and standards that have been adopted by the State of California to address global climate change (GCC) issues.

Executive Order S-3-05. In 2005, former Governor Schwarzenegger signed Executive Order S-3-05, which established the following GHG emission reduction goals for California: (1) by 2010, reduce GHG emissions to 2000 levels; (2) by 2020, reduce GHG emissions to 1990 levels; and (3) by 2050, reduce GHG emissions to 80 percent below 1990 levels. However, in adopting the 2006 Global Warming Solutions Act (AB 32), discussed below, the Legislature did not adopt the 2050 horizon-year goal from Executive Order No. S-3-05.

Assembly Bill 32. Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, was enacted after considerable study and expert testimony before the Legislature. The heart of AB 32 is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020 (Health & Safety Code, §38550). In order to achieve this reduction mandate, AB 32 requires the ARB to adopt rules and regulations in an open public process that achieve the maximum technologically feasible and cost-effective GHG reductions.

In response to the adoption of AB 32, in 2007, the ARB approved a statewide limit on the GHG emissions level for year 2020 consistent with the determined 1990 baseline. The ARB's adoption of this limit is in accordance with Health & Safety Code section 38550.

Further, in 2008, the ARB adopted the *Climate Change Scoping Plan: A Framework for Change (Scoping Plan)* in accordance with Health & Safety Code section 38561. The *Scoping Plan* establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions for various emission sources/sectors to 1990 levels by 2020.

In the *Scoping Plan*, the ARB determined that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of approximately 28.5 percent from the otherwise projected

2020 emissions level; i.e., those emissions that would occur in 2020, absent GHG-reducing laws and regulations (referred to as “Business-As-Usual” [BAU] or “No Action Taken” [NAT]). In the 2011 Final Supplement to the *Scoping Plan’s* Functional Equivalent Document, the ARB revised its estimates of the projected 2020 emissions level in light of the economic recession and the availability of updated information about GHG reduction regulations. Based on the new economic data, the ARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of 21.7 percent (down from 28.5 percent) from the BAU conditions. The 2020 emissions level projection was also updated to account for newly implemented regulatory measures, including Pavley I (model years 2009–2016) and the Renewable Portfolio Standard (12 percent to 20 percent), resulting in the ARB’s determination that achieving the 1990 emissions level in 2020 would require a reduction in GHG emissions of 16 percent (down from 28.5 percent) from the BAU conditions.

Most recently, in 2014, the ARB adopted the *First Update to the Climate Change Scoping Plan: Building on the Framework (First Update)*. The stated purpose of the *First Update* is to “highlight California’s success to date in reducing its GHG emissions and lay the foundation for establishing a broad framework for continued emission reductions beyond 2020, on the path to 80 percent below 1990 levels by 2050.” The *First Update* found that California is on track to meet the 2020 emissions reduction mandate established by AB 32. The *First Update* also noted that California could reduce emissions further by 2030 to levels squarely in line with those needed to stay on track to reduce emissions to 80 percent below 1990 levels by 2050 if the State realizes the expected benefits of existing policy goals.

In conjunction with the *First Update*, the ARB identified six key focus areas comprising major components of the State’s economy to evaluate and describe the larger transformative actions that will be needed to meet the State’s more expansive emission reduction needs by 2050. Those six areas are: (1) energy; (2) transportation (vehicles/equipment, sustainable communities, housing, fuels, and infrastructure); (3) agriculture; (4) water; (5) waste management; and, (6) natural and working lands. The *First Update* identifies key recommended actions for each sector that will facilitate achievement of the 2050 reduction target.

ARB identified new technologies that would assist the state in meeting the 2050 target. Those technologies include energy demand reduction through efficiency and activity changes; large-scale electrification of on-road vehicles, buildings and industrial machinery; decarbonizing electricity and fuel supplies; and, the rapid market penetration of efficient and clean energy technologies.

As part of the *First Update*, the ARB recalculated the State’s 1990 emissions level using more recent global warming potentials identified by the IPCC. Using the recalculated 1990 emissions level and the revised 2020 emissions level projection identified in the 2011 Final Supplement, the ARB determined that achieving the 1990 emissions level by 2020 would require a reduction in GHG emissions of approximately 15 percent (instead of 28.5 percent or 16 percent) from the BAU conditions.

The *First Update* included a strong recommendation from the ARB for setting a mid-term statewide GHG emissions reduction target. The ARB specifically recommended that the mid-term target be consistent with: (i) the United States’ pledge to reduce emissions 42 percent below 2005 levels (which translates to a 35 percent reduction from 1990 levels in California); and (ii) the long-term policy goal of reducing emissions to 80 percent below 1990 levels by 2050. However, to date, there is no legislative authorization for a post-2020 GHG reduction target, and the ARB has not established such a target.

**Renewable Portfolio Standard.** California’s Renewable Portfolio Standard requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of

total retail sales by 2020.<sup>2</sup> The 33 percent standard is consistent with the Renewable Portfolio Standard goal established in the *Scoping Plan*. As interim measures, this standard requires 20 percent of retail sales to be sourced from renewable energy by 2013, and 25 percent by 2016.<sup>3</sup>

Pavley Standards. AB 1493 required the ARB to adopt regulations to reduce GHG emissions from non-commercial passenger vehicles and light-duty trucks for model years 2009–2016, which are oftentimes referred to as the “Pavley I” standards. The ARB obtained a waiver from the USEPA that allows for implementation of these regulations notwithstanding possible federal preemption concerns.

Low Carbon Fuel Standard. Executive Order S-1-07 requires a 10 percent or greater reduction in the average fuel carbon intensity for transportation fuels in California regulated by the ARB by 2020.<sup>4</sup> In 2009, the ARB approved the Low Carbon Fuel Standard (LCFS) regulations, which became fully effective in April 2010. In 2013, an ethanol company obtained a court order compelling the ARB to remedy substantive and procedural defects under CEQA of the LCFS adoption process.<sup>5</sup> However, the court allowed implementation of the LCFS to continue pending correction of the identified defects. Consequently, this analysis assumes that the LCFS will remain in effect during construction and operation of the Project.

Advanced Clean Cars Program. In 2012, the ARB approved the Advanced Clean Cars (ACC) program, a new emissions-control program for model years 2017–2025. (This program is sometimes referred to as “Pavley II.”) The program combines the control of smog, soot, and GHGs with requirements for greater numbers of zero-emission vehicles. By 2025, when the rules will be fully implemented, new automobiles will emit 34 percent fewer GHG.

Solid Waste Sources. The California Integrated Waste Management Act of 1989, as modified by AB 341, requires each jurisdiction’s source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995, through source reduction, recycling, and composting activities; (2) diversion of 50 percent of all solid waste on and after January 1, 2000; and (3) diversion of 75 percent of all solid waste on or after 2020, and annually thereafter. The California Department of Resources Recycling and Recovery (CalRecycle) is required to develop strategies, including source reduction, recycling, and composting activities, to achieve the 2020 goal.

## **Background Air Quality**

The ARB and the SCAPCD operate a series of ambient air quality monitoring stations throughout the South Coast Air Basin (SCAB). The closest monitoring sites to the proposed Lassen Substation are in the City of Mt. Shasta and Yreka. The City of Mt. Shasta monitoring station measured PM10, but ceased operation in 2009. The Yreka monitoring station measures O3, PM10, and PM2.5. While exceedances of the 24-hour PM10 standard were measured at City of Mt. Shasta in 2008, the

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<sup>2</sup> Initially, the Renewable Portfolio Standard provisions applied only to investor-owned utilities, community choice aggregators, and electric service providers. SBX1-2 added, for the first time, publicly owned utilities to the entities subject to the standard.

<sup>3</sup> On January 28, 2015, Assembly Member Eduardo Garcia introduced AB 197, which – if enacted – would require an electrical corporation or local publicly-owned electric utility to adopt a long-term procurement strategy to achieve a target of procuring 50 (not 33) percent of its electricity products from eligible renewable energy resources by December 31, 2030.

<sup>4</sup> Carbon intensity is a measure of the GHG emissions associated with the various production, distribution and use steps in the “lifecycle” of a transportation fuel.

<sup>5</sup> POET, LLC v. CARB (2013) 217 Cal.App.4th 1214.

measurements were likely attributable to exceptional events and did not warrant re-designation of the air basin as a nonattainment area. NO<sub>2</sub>, SO<sub>2</sub>, and CO are not measured in the Northeast Plateau Air Basin. Table 4.4-2 provides a summary of background air quality representative of the Project region.

**TABLE 4.4-2 REPRESENTATIVE AIR QUALITY DATA FOR THE LASSEN SUBSTATION PROJECT AREA (2006-2010)**

AIR QUALITY INDICATOR	2009	2010	2011	2012	2013
<i>Ozone (O<sub>3</sub>)<sup>(1)</sup></i>					
Peak 1-hour value (ppm)	0.076	0.070	0.069	0.076	0.077
Days above state standard (0.09 ppm)	0	0	0	0	0
Peak 8-hour value (ppm)	0.062	0.067	0.061	0.071	0.071
Days above state standard (0.070 ppm)	0	0	0	1	1
Days above federal standard (0.075 ppm) <sup>(1,3)</sup>	0	0	0	0	0
<i>Particulate matter less than or equal to 10 microns in diameter (PM<sub>10</sub>)<sup>(2)</sup></i>					
Peak 24-hour value (µg/m <sup>3</sup> )	33.4	25.2	28.7	53.2	54.6
Days above state standard (50 µg/m <sup>3</sup> )	0	0	0	0	0
Days above federal standard (150 µg/m <sup>3</sup> )	0	0	0	0	0
Annual Average value (ppm)	12.7	10.4	11.5	13.1	13.6
<i>Particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>)</i>					
Peak 24-hour value (µg/m <sup>3</sup> )	16.5	17.0	15.8	29.9	43.5
Days above federal standard (35 µg/m <sup>3</sup> )	0	0	0	0	2
Annual Average value (ppm)	5.1	*	5.5	5.6	7.8

Notes: \* = not available

(1) The federal 8-hour ozone standard was previously defined as 0.08 ppm (one significant digit). Measurements were rounded up or down to determine compliance with the standard; therefore, a measurement of 0.084 ppm is rounded to 0.08 ppm. The 8-hour ozone ambient air quality standards are met at an ambient air quality monitoring site when the average of the annual fourth-highest daily maximum 8-hour average ozone concentration is less than or equal to the standard.

(2) Measurements from Yreka.

Source: [http://www.arb.ca.gov/adam/php\\_files/aqdphp/topfourdisplay.php](http://www.arb.ca.gov/adam/php_files/aqdphp/topfourdisplay.php)

### 4.4.3 Significance Criteria

The general significance thresholds are derived from Appendix G of the CEQA guidelines, and indicate that a project could have potentially significant impacts to air quality if it could:

- a) Conflict with or obstruct implementation of the applicable air quality plan.
- b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

- c) Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for ozone precursors).
- d) Expose sensitive receptors to substantial pollutant concentrations including air toxics such as diesel particulates.
- e) Create objectionable odors affecting a substantial number of people.

A project could have potentially significant impacts in relation to GHG emissions if it could:

- a) Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; or
- b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHG.

#### 4.4.4 Environmental Impacts

##### Air Quality

Would the Project:

**a) Conflict with or obstruct implementation of the applicable air quality plan?**

**No Impact.** Siskiyou County has not adopted CEQA significance criteria for air quality. There are no numeric thresholds established for emissions from construction. The SCAPCD has adopted thresholds for stationary sources under its New Source Review rule for requiring best available control technology (BACT) and an air quality impact assessment. Those thresholds indicate that further analysis is required if a source's emissions exceed 2,500 pounds per day (lbs/day) for CO and 250 lbs/day for all other criteria pollutants. These thresholds were used to evaluate the significance of impacts from the proposed Lassen Substation. As shown in Tables 4.4-3 and 4.4-4, the proposed Project would not exceed adopted thresholds; therefore, the Project would not conflict with or obstruct implementation of air quality plans or standards.

The ARB recommended the use of a threshold of 10,000 metric tons of CO<sub>2</sub>e emissions as a significance threshold for projects in their Climate Change Proposed Scoping Plan, which was approved by the ARB's Board in January 2009. Other agencies have used a threshold of 10,000 metric tons of CO<sub>2</sub>e as a significance threshold under CEQA for industrial projects. This threshold was used to evaluate the significance of GHG emissions from the Lassen Substation. Construction and operation of the proposed Project would not exceed thresholds established by SCAPCD, ARB, or other agencies. Therefore, the Project would not conflict or obstruct implementation of the applicable air quality plan, and there would be no impact.

**b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation?**

**No Impact.** The Project includes construction of the substation, along with installation of an additional 200 feet of transmission line, replacement of approximately 36 transmission poles, an upgrade of two distribution lines, and installation of approximately 1,200 feet of underground cable. Replacement of the transmission poles would occur simultaneously with the substation construction. To evaluate emissions associated with construction, it was assumed that the construction phases would occur sequentially rather than simultaneously. Emissions from the construction phase of the Project were estimated based on the ARB's EMFAC2007 Model (ARB

2007a) for on-road vehicles, and the ARB's OFFROAD Model (ARB 2007b) for construction equipment. Emissions for construction equipment were obtained from published emission estimates for the South Coast Air Quality Management District (SCAQMD 2011), which were considered to be representative of emissions from construction equipment within the state of California. Emissions were based on emission factors from 2012, and therefore represent a conservative estimate of emissions as emission factors decrease in later years with the phase-out of older equipment and increasingly stringent emission standards for new equipment. The maximum daily emissions for each construction phase are presented in Table 4.4-3.

**TABLE 4.4-3 MAXIMUM DAILY CONSTRUCTION EMISSIONS, LBS/DAY**

EMISSION SOURCE	EMISSIONS, LBS/DAY					
	ROG	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>House Demolition</b>						
Heavy Equipment	3.99	14.50	33.24	0.04	1.54	1.37
Worker Vehicles	0.28	5.77	0.69	0.00	0.06	0.02
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>4.29</b>	<b>20.42</b>	<b>34.14</b>	<b>0.05</b>	<b>1.71</b>	<b>1.41</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Lassen Substation - Survey</b>						
Worker Vehicles	0.21	4.33	0.52	0.00	0.04	0.02
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>0.23</b>	<b>4.48</b>	<b>0.73</b>	<b>0.00</b>	<b>0.15</b>	<b>0.04</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Lassen Substation - Grading</b>						
Heavy Equipment	6.86	27.41	57.47	0.07	2.58	2.30
Worker Vehicles	0.35	7.21	0.87	0.00	0.07	0.03
Fugitive Dust					1.56	0.33
<b>Total Daily</b>	<b>7.21</b>	<b>34.62</b>	<b>58.33</b>	<b>0.07</b>	<b>4.22</b>	<b>2.65</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Lassen Substation - Concrete Placement and Framework</b>						
Heavy Equipment	3.68	18.22	26.57	0.03	1.60	1.42
Worker Vehicles	0.35	7.21	0.87	0.00	0.07	0.03
Construction Trucks	0.12	1.20	2.23	0.00	0.54	0.15
<b>Total Daily</b>	<b>4.15</b>	<b>26.64</b>	<b>29.67</b>	<b>0.04</b>	<b>2.21</b>	<b>1.59</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Lassen Substation - Steel Erection</b>						
Heavy Equipment	1.71	5.97	13.71	0.02	0.78	0.69
Worker Vehicles	0.35	7.21	0.87	0.00	0.07	0.03
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>2.08</b>	<b>13.33</b>	<b>14.78</b>	<b>0.02</b>	<b>0.96</b>	<b>0.74</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No

EMISSION SOURCE	EMISSIONS, LBS/DAY					
	ROG	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Lassen Substation - Placing Equipment</b>						
Heavy Equipment	2.23	7.43	15.24	0.02	0.91	0.81
Worker Vehicles	0.28	5.77	0.69	0.00	0.06	0.02
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>2.53</b>	<b>13.35</b>	<b>16.14</b>	<b>0.02</b>	<b>1.08</b>	<b>0.86</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Lassen Substation - Bus Work</b>						
Heavy Equipment	2.26	6.22	12.21	0.01	0.65	0.58
Worker Vehicles	0.28	5.77	0.69	0.00	0.06	0.02
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>2.56</b>	<b>12.14</b>	<b>13.11</b>	<b>0.02</b>	<b>0.82</b>	<b>0.63</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Line Work - Survey</b>						
Worker Vehicles	0.21	4.33	0.52	0.00	0.04	0.02
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>0.23</b>	<b>4.48</b>	<b>0.73</b>	<b>0.00</b>	<b>0.15</b>	<b>0.04</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Line Work - Access Road Construction</b>						
Heavy Equipment	3.85	15.33	33.87	0.04	1.34	1.19
Worker Vehicles	0.14	2.88	0.35	0.00	0.03	0.01
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>4.01</b>	<b>18.37</b>	<b>34.42</b>	<b>0.04</b>	<b>1.48</b>	<b>1.22</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Line Work - Auger Holes, Direct Imbed Poles</b>						
Heavy Equipment	4.67	20.52	37.55	0.05	2.04	1.81
Worker Vehicles	0.35	7.21	0.87	0.00	0.07	0.03
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>5.03</b>	<b>27.88</b>	<b>38.63</b>	<b>0.05</b>	<b>2.22</b>	<b>1.86</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Line Work - Material Haul</b>						
Heavy Equipment	3.28	15.64	22.86	0.03	1.53	1.36
Worker Vehicles	0.21	4.33	0.52	0.00	0.04	0.02
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>3.51</b>	<b>20.12</b>	<b>23.58</b>	<b>0.03</b>	<b>1.69</b>	<b>1.40</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Line Work - Structure Assembly</b>						
Heavy Equipment	2.45	12.15	17.72	0.02	1.07	0.95
Worker Vehicles	0.35	7.21	0.87	0.00	0.07	0.03
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02

EMISSION SOURCE	EMISSIONS, LBS/DAY					
	ROG	CO	NOx	SOx	PM <sub>10</sub>	PM <sub>2.5</sub>
<b>Total Daily</b>	<b>2.82</b>	<b>19.51</b>	<b>18.79</b>	<b>0.03</b>	<b>1.25</b>	<b>1.00</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Line Work - Structure Erection</b>						
Heavy Equipment	3.68	18.22	26.57	0.03	1.60	1.42
Worker Vehicles	0.35	7.21	0.87	0.00	0.07	0.03
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>4.04</b>	<b>25.59</b>	<b>27.65</b>	<b>0.04</b>	<b>1.78</b>	<b>1.47</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Line Work - Wire Installation</b>						
Heavy Equipment	11.24	45.26	105.36	0.15	4.44	3.95
Worker Vehicles	0.56	11.54	1.39	0.01	0.12	0.04
Construction Trucks	0.06	0.45	0.62	0.00	0.33	0.07
<b>Total Daily</b>	<b>11.85</b>	<b>57.24</b>	<b>107.37</b>	<b>0.16</b>	<b>4.88</b>	<b>4.06</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Line Work - Right of Way Restoration</b>						
Heavy Equipment	3.85	15.33	33.87	0.04	1.34	1.19
Worker Vehicles	0.28	5.77	0.69	0.00	0.06	0.02
Construction Trucks	0.02	0.16	0.20	0.00	0.11	0.02
<b>Total Daily</b>	<b>4.15</b>	<b>21.26</b>	<b>34.77</b>	<b>0.04</b>	<b>1.51</b>	<b>1.24</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Demolition of Old Substation - Equipment Removal</b>						
Heavy Equipment	2.94	12.05	22.57	0.03	1.31	1.17
Worker Vehicles	0.28	5.77	0.69	0.00	0.06	0.02
Construction Trucks	0.02	0.15	0.21	0.00	0.11	0.02
<b>Total Daily</b>	<b>3.24</b>	<b>17.97</b>	<b>23.47</b>	<b>0.03</b>	<b>1.48</b>	<b>1.21</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Demolition of Old Substation - Foundation Removal</b>						
Heavy Equipment	2.39	8.85	18.67	0.02	1.06	0.94
Worker Vehicles	0.28	5.77	0.69	0.00	0.06	0.02
Construction Trucks	0.06	0.45	0.62	0.00	0.33	0.07
<b>Total Daily</b>	<b>2.73</b>	<b>15.07</b>	<b>19.98</b>	<b>0.03</b>	<b>1.45</b>	<b>1.03</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No
<b>Demolition of Old Substation - Grading</b>						
Heavy Equipment	4.46	18.18	37.80	0.04	1.68	1.50
Worker Vehicles	0.28	5.77	0.69	0.00	0.06	0.02
Construction Trucks	0.06	0.45	0.62	0.00	0.33	0.07
<b>Total Daily</b>	<b>4.79</b>	<b>24.40</b>	<b>39.11</b>	<b>0.04</b>	<b>2.07</b>	<b>1.59</b>
<i>Significance Threshold</i>	250	2500	250	250	250	250
Above Threshold?	No	No	No	No	No	No

As shown in Table 4.4-3, emissions are below the emission thresholds, and Project construction would not result in a significant air quality impact. Project construction would therefore not violate any adopted air quality standards or result in a cumulatively considerable increase in any nonattainment pollutants.

- c) **Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

**Less than Significant Impact.** Emissions during Project operation would be confined to emissions from vehicles associated with inspection and maintenance of the substation. Operational Emissions would be lower than emissions associated with construction as presented in Table 4.4-3. Operational emissions would therefore not violate any adopted air quality standards or result in a cumulatively considerable increase in any nonattainment pollutants.

Project construction would result in temporarily increased emissions of fugitive dust during grading activities. Fugitive dust emissions would be controlled through implementation of standard dust control measures, and would be less than significant.

- d) **Expose sensitive receptors to substantial pollutant concentration?**

**No Impact.** As stated above, construction and operation of the proposed Project would not result in any violation of applicable air quality standards, including substantial pollutant concentrations to sensitive receptors, and no impact would occur.

- e) **Create objectionable odors that would affect a substantial amount of people?**

**No Impact.** Operation of the proposed substation would not result in the creation of objectionable odors. During construction, emissions would be generated from vehicles and equipment, but these emissions would be temporary in nature and below any adopted air quality standards. In addition, Project construction would occur in a rural residential area, and would not affect a substantial number of people. No impact would occur.

### **Greenhouse Gas Emissions**

Would the Project:

- a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

**Less than Significant Impact.** Project construction and operation have the potential to contribute GHG emissions and could contribute to global climate change impacts. Given the nature of the Project, the main source of GHGs would be from construction of the substation. Operational emissions are minor in comparison with construction emissions. Construction GHG emissions were estimated using the same approach as criteria pollutants. GHG emission estimates are presented in Table 4.4-4. As shown in Table 4.4-4, total GHG emissions of 1,690 metric tons are below the 10,000 metric ton of CO<sub>2</sub>e threshold, and would not result in a cumulatively considerable contribution of GHG. Impacts would be less than significant.

**TABLE 4.4-4 TOTAL CONSTRUCTION GHG EMISSIONS, METRIC TONS/YEAR**

CO2	CH4	N2O	CO2E
1,359	0.14	1.06	1,690

**b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**No Impact.** Siskiyou County has not adopted CEQA significance criteria for GHG. There are no numeric thresholds established for emissions from construction. The SCAPCD has adopted thresholds for stationary sources under its New Source Review rule for requiring BACT and an air quality impact assessment. Those thresholds indicate that further analysis is required if a source's emissions exceed 2,500 lbs/day for CO and 250 lbs/day for all other criteria pollutants. These thresholds were used to evaluate the significance of impacts from the proposed Lassen Substation.

The ARB recommended the use of a threshold of 10,000 metric tons of CO<sub>2</sub>e emissions as a significance threshold for projects in their Climate Change Proposed Scoping Plan, which was approved by the ARB's Board in January 2009. Other agencies have used a threshold of 10,000 metric tons of CO<sub>2</sub>e as a significance threshold under CEQA for industrial projects. This threshold was used to evaluate the significance of GHG emissions from the Lassen Substation. As shown in Tables 4.4-3 and 4.4-4, the proposed Project would not exceed adopted thresholds and potential impacts were found to be less than significant. Therefore, the proposed Project would not conflict with applicable plans, policies, or regulations for reducing emissions of GHGs, and no impact would occur.

## 4.5 Biological Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	<input type="checkbox"/>	X	<input type="checkbox"/>	<input type="checkbox"/>
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

### 4.5.1 Methodology

Methods used to identify and describe biological resources in the Project area included a desktop pre-field investigation to review existing information for the region, reconnaissance-level habitat assessments of the Project area, and general avian surveys within the Project area. The Project study area discussed in this section is defined as the area within 250 feet of the two existing transmission/distribution lines, all areas within 250 feet of a construction area, and within 50 feet of existing, temporary access roads. Details of the surveys are included in the *Biological Resources Technical Report* (provided in Appendix B of the PEA).

### 4.5.2 Environmental Setting

#### Regulatory Framework

**The National Environmental Policy Act (NEPA; 42 U.S.C. 4321 et seq.)** and its supporting federal regulations establish certain requirements that must be adhered to for any project “financed, assisted, conducted or approved by a federal agency.” In making a decision on the issuance of federal grant

monies for elements of a proposed project, the federally designated lead agency pursuant to NEPA is required to “determine whether the proposed action may significantly affect the quality of the human environment.”

**The Federal Endangered Species Act (ESA; 16 U.S.C. §1531 et seq.)** provides provisions for the protection of species listed as threatened or endangered as well as their designated critical habitats. It prohibits the “take” of listed species; however, “incidental take” as the result of otherwise legal project activities may be authorized pursuant to ESA Section 7 (with federal project nexus) or Section 10. Section 10 includes provisions for the development of habitat conservation plans. The U.S. Fish and Wildlife Service (USFWS) advises that proposed and candidate species may be listed at any time and should be considered during project planning. ESA administration is managed by the USFWS for terrestrial species and the National Marine Fisheries Service for species with a significant marine life history component.

**Migratory Bird Treaty Act (16 U.S.C. § 703 - 711)** affords protection to 836 species of migratory birds, including waterfowl, shorebirds, seabirds, wading birds, non-migratory upland game birds, raptors and passerines (including crows and ravens), their eggs and occupied nests. The Migratory Bird Treaty Act (MBTA) is administered by USFWS.

**Bald and Golden Eagle Protection Act (16 U.S.C. § 668)** specifically protects bald and golden eagles from harm or trade of nests, eggs and body parts of these species. The Bald and Golden Eagle Protection Act is administered by USFWS.

Federal Regulation of Waters of the United States, Including Wetlands (Clean Water Act [CWA] Sections 404 and 401, 33 U.S.C. 1251-1376).

**Section 404 Clean Water Act.** Waters of the U.S. including wetlands are subject to USACE jurisdiction under Section 404 of the CWA. A Section 404 permit is required for the discharge of dredged or fill material into Waters of the U.S. The Sacramento District of the USACE would provide review and permitting services for this Project.

*Definition of the Waters of the United States.* Waters of the U.S., as applied to the jurisdictional limits of the authority of the USACE under the CWA, is defined in 33 CFR Part 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” The 1987 *Corps of Engineers Wetlands Delineation Manual* required that wetlands possess the following characteristics: 1) the prevalent vegetation be comprised of hydrophytic species; 2) soils may be classified as hydric, or soils possess characteristics that are associated with reducing soils conditions; and 3) hydrologic conditions are present in that the area is inundated either permanently or periodically at mean water depths  $\leq 6.6$  feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Following the Supreme Court’s decision in the consolidated cases *Rapanos v. United States* (2006) and *Carabell v. United States* (2006) (referred to as “*Rapanos*”), the jurisdiction of Waters of the U.S. was refined, giving the USACE jurisdiction over specific waters such as traditional navigable waters, tributaries of traditional navigable waters, and wetlands that abut both types of waters (USACE and USEPA 2007).

In June 2015 the Environmental Protection Agency (EPA) and the USACE jointly published a final rule defining the scope of waters and wetlands protected under the CWA in light of the statute, science, the *Rapanos* decision, and the agencies’ experience and technical expertise (EPA and

USACE 2015). This final rule clarifies the scope of “waters of the United States” protected under the CWA to include:

- Traditional navigable waters (TNW), interstate waters, and the territorial seas (known water of the U.S.)
- Impoundments of jurisdictional waters
- Covered *tributaries* (tributaries to TNWs, interstate waters, territorial seas)
- Covered *adjacent waters* (adjacent to TNWs, interstate waters, territorial seas, impoundments, covered tributaries)
- Certain waters w/significant nexus to a TNW, an interstate water, or a territorial sea (e.g., vernal pools, prairie potholes)
- All waters w/significant nexus to a TNW, an interstate water, or a territorial sea that are located either:
  - Within the 100-year floodplain of a TNW, interstate water, or territorial sea
  - Within 4,000 feet of the high tide line or ordinary high water mark of a TNW, interstate water, territorial sea, impoundment, or covered tributary

The final rule defines covered tributaries as:

- A water that contributes flow, either directly or indirectly, or through another water to a known water of the U.S.
- A water that is characterized by the presence of the physical indicators of a bed and bank, and an ordinary high water mark (OHWM).

Covered tributaries may be perennial, intermittent, or ephemeral.

The final rule defines covered adjacent waters as

- Waters bordering, contiguous to, or neighboring to a water of the U.S. as defined above.
- “Neighboring” includes waters that are located within:
  - 100 feet of the OHWM of a jurisdictional water;
  - 100-year *floodplain* of a jurisdictional water AND not more than 1,500 feet from the ordinary high water mark; or
  - 1,500 feet of the high tide line of a known water of the U.S., including the Great Lakes.

The entire water is considered “neighboring” even if only a portion of that water is within the covered area.

The USACE has also produced a series of Regional Supplements to the 1987 *Manual*, providing technical guidance and procedures for identifying and delineating wetlands that may be subject to Section 404 CWA. These Regional Supplements address wetland characteristics that, due to regional differences climate, geology, soils, hydrology, plant and animal communities, and other factors (USACE 2008a), may not meet the characteristics identifying in the 1987 *Manual*. The Project falls within the Western Mountains, Valleys, and Coasts Region.

**Executive Order 11990, Protection of Wetlands (42 U.S.C. 4321 91977)** directs federal agencies to avoid to the extent possible the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Federal agencies are required to take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency’s responsibilities for: 1) acquiring, managing,

and disposing of federal lands and facilities; 2) providing federally undertaken, financed, or assisted construction and improvements; and 3) conducting federal activities and programs affecting land use, including but not limited to water and related land resources planning, regulating, and licensing activities.

#### Siskiyou County General Plan

The Conservation Element of the Siskiyou County General Plan includes general objectives relating to biological resources. These objectives include: 1) “to preserve, protect and manage the Forest Lands as both wild habitat and a productive economic resource”; and 2) “to preserve and maintain streams, lakes and forest open space as a means of providing natural habitat for species of wildlife.” The proposed Project would comply with these general objectives by: 1) utilizing the existing right-of-way for the majority of the Project; 2) completely avoiding construction on forest lands and near lakes; and 3) spanning sensitive areas such as wetlands, riparian zones, and streams. Therefore, no conflict with local policies or ordinances would result from approval and implementation of the proposed Project.

There are no Habitat Conservation Plans or other approved governmental habitat plans that involve lands within the proposed Project area. No conflict with habitat conservation plans would result from the proposed Project.

#### Existing Conditions

The Project is located in Strawberry Valley adjacent to the City of Mt. Shasta, in the southern Cascade Mountains subsection of the Western Range and Irrigated Region (USDA 2006) in Siskiyou County, California. The area is primarily volcanic, supporting active but dormant cones. The Project area is bound on the northeast by Mount Shasta, on the west by Mount Eddy and the Coast Ranges, and to the southwest by Lake Siskiyou. To the north lie Shasta and Scott valleys, just south of the California and Oregon state line. Elevations within the Mount Shasta area range from 14,162 feet on Mount Shasta summit to 3,280 feet at the southern end of Strawberry Valley, near Lake Siskiyou. Project site elevation is approximately 3,400 feet. Vegetation communities in the Project area include non-native grassland, wet montane meadow, dry montane meadow, fen, riparian scrub, and fragmented lower montane coniferous forest.

Wetland delineation surveys conducted in September 2011 and July 2015 mapped areas of extensive palustrine emergent (PEM) and palustrine scrub-shrub (PSS) wetlands crossed by the ROW from pole 21/47 south to between poles 3/48 and 4/48, from the existing substation north to Hatchery Lane, and from pole 20/47 northeast along the distribution ROW to Smith Road. Several smaller waters and wetlands are crossed by the ROW south of the existing substation.

The PEM and PES wetlands from Smith Road south to Hatchery Lane have been degraded by cattle and horse grazing, especially south of pole 20/47. These wetlands are fed by a combination of springs, precipitation, snowmelt, and runoff from the streets of the City of Mt. Shasta to the east (Theiss 1990, Enplan 2008). Water from these wetlands flows south under Hatchery Lane and into a second wetland, eventually discharging into Cold Creek (Enplan 2008), which emerges from beneath I-5 and flows southwest perpendicular to the transmission line.

South of the existing substation, near poles 23/48 and 24/48, are two seeps that receive water from an agricultural ditch running at the eastern edge of the property. Water reaches the surface as the slope intersects groundwater level, and surface water flows southwest toward the center of the field, outside the PacifiCorp ROW.

Most of these wetlands are dry- and wet-montane meadows except for one section of freshwater marsh that is surrounded by exclusion fencing; Poles 22/47 and 23/47 lie within this freshwater marsh.

The property between Hatchery Lane on the north and Cold Creek on the south consists of natural PEM wetlands characterized as wet and dry montane meadows, as well as natural PEM wetlands characterized as freshwater marsh, and riparian scrub. Cold Creek is an upper perennial riverine wetland and is bordered by riparian scrub habitat. South of Cold Creek is a combination of natural and created wetlands, as well as non-wetland natural areas (characterized by dry montane meadows vegetation communities) that were set aside as wetland mitigation (Theiss 1990) for local development. In 2000, both properties were declared the Morgan-Merrill Wildlife Preserve (County of Siskiyou 2000) as part of that mitigation plan.

For additional information, please see the *Jurisdictional Delineation Report* in Appendix D.

The proposed substation site is situated on two residential parcels, which support fragmented lower-montane coniferous forest and ornamental vegetation within a rural residential area. Existing transmission lines currently cross over several vegetation communities, including non-native grassland, wet and dry montane meadow, transmontane freshwater marsh, riparian scrub, and fragmented lower montane coniferous forest. The study area includes numerous residential properties, is adjacent to Interstate 5, and is bisected by two-lane, paved, county-maintained roads. Open space within the Project area along the northern and southern ends of the transmission line has been heavily disturbed by cattle grazing.

The study area and Project site primarily provide forage habitat for common and sensitive species that may migrate through the area. The area supports resident raptors and large mammals, including white-tailed deer, bear, and coyote, and is within the range of several sensitive or protected plant and wildlife species. Suitable habitat exists within the Project area for 20 special-status wildlife species and 17 special-status plant species, although the potential for special-status plant species to occur within the Project area is low due to the current level of disturbance.

### Wildlife

The Project area supports wildlife common to the region. Mammals or their sign observed on or near the Project area included red fox (*Vulpes vulpes*), coyote (*Canis latrans*), black bear (*Ursinus americanus*), raccoon (*Procyon lotor*), bobcat (*Felis rufus*), and mule deer (*Odocoileus hemionus*). Wildlife sign observed along the transmission line and potential substation area, including vocalizations, burrows, tracks and scat, was recorded and a general species list was compiled (refer to the *Biological Resources Technical Report* in Appendix B).

### Special-Status Species

Special-status species are defined as species that meet one or more of the following criteria:

- Listed, proposed for listing, or candidates for listing as threatened or endangered under the federal Endangered Species Act (50 CFR 17.11 for wildlife, 50 CFR 17.12 for plants, 67 FR 40658 for candidates, and various notices in the Federal Register for proposed species);
- Listed or proposed for listing by the State of California as rare, threatened, or endangered under the California Endangered Species Act (California Administrative Code, Title 14, Section 670.5);
- Included on List 1B, 3, 3, or 4 of the California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants of California (CNDDB 2011);

- Included on the California Department of Fish and Game (CDFG) Special Vascular Plants, Bryophytes, and Lichens List (CDFG 2011);
- Designated as Species of Special Concern by the CDFG; identified as “species of concern” or “species of local concern” by the USFWS;
- Protected by the Migratory Bird Treaty Act (MBTA) (U.S.CV. 7030-0712; CH. 128; July 13, 1918; 40 Stat. 755, as amended); and
- Species that otherwise meet the definition of rare, threatened, or endangered, as described in the CEQA Guidelines, Section 15380.

Special-status plant and wildlife species with potential to occur in the Project area are discussed in the following sections.

### Special-Status Plants

Based upon database searches and literature review, 66 special-status plant species were identified as potentially occurring within the Project area. Upon further analysis, it was determined that 41 of these species have no potential to occur based variables, including lack of suitable habitat and elevation requirements, and are not discussed further. Plants with potential to occur in the Project area are discussed below; potential to occur based on habitat requirements, soils, elevation, and known populations is shown in Table 4.5-1.

#### **Marbled Wild Ginger (*Asarum marmoratum*)**

Marbled wild ginger is a perennial rhizomatous herb that is found in the understory of lower montane coniferous forests. This species blooms from April through August, and is found from elevations of 650 feet through 5,900 feet (200 meters to 1,800 meters). The only recorded occurrence of marbled wild ginger in the Project vicinity is from a specimen collected in 1894 from a location given only as “Sisson”, which is now the City of Mt. Shasta (CDFW 2015).

The Project site contains lower montane coniferous forest near the northwest and southeast ends of the transmission line, and fragments of disturbed lower montane coniferous forest occur adjacent to the proposed Lassen Substation site. These fragments lack a native shrub understory; the understory is dominated by non-native grasses and forbs.

Suitable habitat for marbled wild ginger occurs on the project area. Marbled wild ginger has a moderate potential to occur in the Project area.

#### **Woolly balsamroot (*Balsamorhiza lanata*)**

Woolly balsamroot is a perennial herb that occurs on rocky, volcanic soils in cismontane woodland, open woods, and occasionally on grassy slopes. This species blooms from April through June, and is found at elevations from 2,600 feet to 6,200 feet (800 meters to 1,895 meters). The CNDDDB records multiple occurrences of woolly balsamroot in the Project vicinity, most of which occur between the City of Weed, approximately six miles north of the Project, and Parks Creek. Most of these sites are grassy slopes and open areas, including several recorded sites along the shoulder of Interstate 5 between Weed and Weed Airport. However, one occurrence is within approximately 1 mile of the Project. The CNDDDB records the location as “Pioneer”, and maps it as the being in the vicinity of South Mt. Shasta Boulevard and Church Street (CDFW 2015).

Suitable habitat for woolly balsamroot exists near the northern half of the project, outside the wetlands and wet meadows. Woolly balsamroot has a moderate potential to occur in the Project area.

**Rattlesnake Fern (*Botrypus virginianus*)**

Rattlesnake fern is a perennial herb that occurs in bogs, fens, meadows, seeps, and lower montane coniferous forests. It blooms from June through September and is found at elevations from 3,000 feet to 4,250 feet (728 meters to 1,300 meters). The CNDDDB records 11 occurrences of rattlesnake fern within the Project vicinity, all of which are south of Highway 89. The occurrence of rattlesnake fern nearest to the Project is located approximately 3.5 miles south of the Project site (CDFW 2015).

Suitable habitat occurs in the Project area. The potential for rattlesnake fern to occur in the Project area is moderate.

**Greene's Mariposa Lily (*Calochortus greenei*)**

Greene's mariposa lily is a bulbiferous herb that occurs on volcanic outcrops or open, dry, gravelly soils in meadows, seeps, cismontane woodland, pinyon and juniper woodland, and upper montane coniferous forest. This species blooms from June through August, and is found at elevations from 3,400 feet to 6,200 feet (1,035 meters to 1,895 meters). The CNDDDB has only one record of Greene's mariposa lily in the Project vicinity, near Castle Lake in the Shasta National Forest approximately 6 miles south of the Project (CDFW 2015).

The Project area contains some habitat required for Greene's mariposa lily in the form of volcanic soils and meadows; however, meadows in the Project area are disturbed by horse and cattle grazing. Greene's mariposa lily has a low potential to occur in the Project area.

**Siskiyou Paintbrush (*Castilleja elata*)**

The Siskiyou paintbrush is a hemiparasitic perennial herb that is limited to mesic soils, often serpentine, and occurs in bogs, fens, seeps, and lower montane coniferous forests. This species blooms from May through August, and is found at elevations from 0 feet to 5,740 feet (0 meters to 1,750 meters). In 2011, the CNDDDB recorded a population of this species under its synonym *Castilleja miniata* ssp. *elata* approximately 7 miles northeast of the Project, near Panther Meadows; however, in December 2014 this record was no longer in the CNDDDB under either name (CDFG 2011, CDFW 2015).

Although mesic habitats occur in the Project area, the area lacks the serpentine soils to which this species prefers. Potential for Siskiyou paintbrush clarkia to occur in the Project area is moderate.

**Northern Clarkia (*Clarkia borealis* ssp. *borealis*)**

Northern clarkia is an annual herb that occurs in chaparral, cismontane woodland, and lower montane coniferous forest; often, this species is found along the sides of cut roads. Northern clarkia blooms from July through September and is found at elevations from 2,300 feet to 4,400 feet (400 meters to 1,340 meters). The CNDDDB has one record of this species occurring in the Project vicinity, north of Castle Crags approximately 6.25 miles south of the Project (CDFW 2015).

Suitable habitat occurs on the Project site in the form of lower montane coniferous forest. Potential for northern clarkia to occur in the Project area is moderate.

**Pallid Bird's-beak (*Cordylanthus tenuis* ssp. *pallescens*)**

Pallid bird's-beak is a hemiparasitic annual herb that occurs in gravelly openings in brush patches or on volcanic alluvium in lower montane coniferous forests. This species blooms from July through September and is found at elevations from 2,280 feet to 5,400 feet (695 meters to 1,645 meters). The CNDDDB has 12 records of this species occurring in the Project vicinity, most of which are clustered

around Black Butte and the City of Weed. The nearest recorded population of pallid bird's-beak to the Project is located near the intersection of North Old Stage Road and Audubon Road in 1995 (CDFW 2015).

Suitable habitat for pallid bird's-beak occurs in the Project area in the form of lower montane coniferous forest. Potential for pallid bird's-beak to occur in the Project area is moderate.

**Jepson's dodder (*Cuscuta jepsonii*)**

Jepson's dodder is an annual parasitic vine. It occurs in North Coast coniferous forest, along streambanks. This species blooms from July through September, and occurs at elevations of 3,937 to 7,545 feet (1,200 to 2,300 meters).

Suitable habitat for Jepson's dodder occurs in the Project area. Jepson's dodder has a moderate potential to occur in the Project area.

**Oregon Fireweed (*Epilobium oregonum*)**

Oregon fireweed is a perennial herb that occurs sometimes on serpentine near springs, in bogs, fens, meadows, and upper and lower montane coniferous forest. This species blooms from Jun through September and is found at elevations from 1,650 feet to 8,560 feet (500 to 2,610 meters). The CNDDDB has three records of this species occurring in the Project vicinity, two of which are historic. The third record is undated, and was mapped as occurring in the area of Deetz Station near Black Butte approximately 5 miles northwest of the Project (CDFW 2015).

Suitable habitat for Oregon fireweed occurs in the Project area. Oregon fireweed has a high potential to occur in the Project area.

**Pink-margined monkeyflower (*Erythranthe trinitiensis*)**

The pink-margined monkeyflower is an annual herb that occurs in cismontane woodland, upper and lower montane coniferous forest, and meadows and seeps. This species often occurs on serpentine soils, and along roadsides. It blooms from June through July, and sometimes into August, and is found at elevations from 1,312 to 7,497 feet (400 to 2,285 meters).

Suitable habitat for pink-margined monkeyflower occurs in the Project area, although the species hasn't been recently located in the vicinity. Pink-margined monkeyflower has a moderate potential to occur in the Project area.

**Coast Fawn Lily (*Erythronium revolutum*)**

The coast fawn lily is a bulbiferous herb that occurs in bogs, fens, and along mesic stream banks in broadleaf upland forest and North Coast coniferous forest. This species blooms from May through July and occurs at elevations from 0 feet to 4,400 feet (0 meters to 1,350 meters). The only CNDDDB record of this species in the Project vicinity is from a 1910 collection made in the Edgewood area, approximately 11.5 miles northwest of the project (CDFW 2015).

Although suitable habitat for coast fawn lily occurs in the Project area, the species hasn't been recorded in the areas since 1910. Coast fawn lily has a moderate potential to occur in the Project area.

**Scott Mountain Bedstraw (*Galium serpicum ssp. scotticum*)**

Scott Mountain bedstraw is a perennial herb that occurs in lower montane coniferous forest, generally on north-facing slopes, and often on serpentine soils, usually in mixed coniferous forest. This species blooms from May through August and is found at elevations of 3,300 feet to 6,800 feet (1,000 meters

to 2,075 meters). The CNDDDB has only one record of Scott Mountain bedstraw in the Project vicinity, located on a slope above the North Fork Sacramento River south of Mount Eddy, approximately 8 miles east of the Project (CDFW 2015).

Suitable habitat for Scott Mountain bedstraw occurs in the Project area in the form of lower montane coniferous forest, although its preferred soil type does not occur within the Project area. Potential for Scott Mountain bedstraw to occur in the Project area is moderate.

**Aleppo Avens (*Geum aleppicum*)**

Aleppo avens is a perennial herb found in meadows and seeps, great basin scrub, and lower montane coniferous forest. This species blooms from June through August, and is found at elevations of 1,457 feet to 4,900 feet (450 meters to 1,500 meters). The CNDDDB Records three occurrences of this species in the Project vicinity, two of which are historic. The recent record of Aleppo avens is based on a 2002 observation of this species on private property between Wagon Creek and Cold Creek, approximately 0.75 mile south of the Project (CDFW 2015).

Suitable habitat occurs on the Project site. Potential for Aleppo avens to occur in the Project area is high.

**Alkali hymenoxys (*Hymenoxys lemmoni*)**

Alkali hymenoxys is a perennial herb that occurs in sub-alkaline soils of meadows and seeps, great basin scrub, and lower montane coniferous forest. It blooms from June through August, and is found at elevations from 790 feet to 3,300 feet (240 meters to 1,000 meters). The CNDDDB records four occurrences of alkali hymenoxys in the Project vicinity; all are north or east of the City of Weed and none are more recent than 1972 (CDFW 2015). The population nearest to the Project is also the most recent (1972), and is located west of the community of Edgewood, approximately 13.25 miles northeast of the Project.

Suitable habitat for alkali hymenoxys occurs on the Project site, but it is fragmented and degraded; meadows are heavily grazed by cattle and horses and lower montane coniferous forest is fragmented and lacks a native understory. Potential for alkali hymenoxys to occur in the Project area is low.

**Baker's Globe Mallow (*Iliamna bakeri*)**

Baker's globe mallow is a perennial herb that occurs on rocky loam or volcanic soils in chaparral, pinyon-juniper woodland, and lower montane coniferous forest. This species blooms from June through September, and occurs at elevations from 3,300 feet to 8,200 feet (1,000 meters to 2,500 meters). The CNDDDB has only one record of this species occurring in the Project vicinity; a collection of this species was made in 1940 and the location has been mapped by the CNDDDB as the area around McBride Springs Campground, approximately 3.6 miles northeast of the Project (CNDDDB 2015).

Suitable habitat occurs in the Project area. Potential for Baker's globe mallow to occur in the Project area is moderate.

**Pickering's Ivesia (*Ivesia pickeringii*)**

Pickering's ivesia is a perennial herb that is typically associated with serpentine soils, and occurs on mesic sites such as wet meadows, seeps, and mesic lower montane coniferous forest. This species blooms from June through August, and occurs at elevations from 2,600 feet to 4,950 feet (800 meters to 1,510 meters). The CNDDDB has one record of Pickering's ivesia in the Project vicinity occurring approximately 11.5 miles north of the Project, east of the community of Edgewood (CDFW 2015).

Suitable habitat occurs in the Project area, although its preferred soil type is not present. Potential for Pickering's ivesia to occur in the Project area is low.

**Hutchinson's Lewisia (*Lewisia kelloggii ssp. hutchisonii*)**

Hutchinson's lewisia is a perennial herb that occurs in openings and ridgetops in upper montane coniferous forest, often on slate or rhyolite tuff. This species blooms from May through August, although sometimes as early as April, at elevations of 2,510 to 7,760 feet (765 to 2,365 meters) (CDFW 2015).

Marginal suitable habitat occurs in the Project area. Potential for Hutchinson's lewisia to occur is low.

**Peck's Lomatium (*Lomatium peckianum*)**

Peck's lomatium is a perennial herb that occurs in volcanic soils on rocky slopes, flats, and sometimes grassy openings, in lower montane coniferous forest, chaparral, cismontane woodland, and pinyon and juniper woodland. This species blooms from April through May and occurs at elevation from 2,300 feet to 5,900 feet (700 meters to 1,800 meters). The CNDDDB has one record of Peck's lomatium occurring in the Project vicinity at Weed Airport, approximately 12.74 miles north of the Project (CDFW 2015).

Suitable habitat occurs in the Project area. Potential for Peck's lomatium to occur in the Project area is moderate.

**Woodnymph (*Moneses uniflora*)**

Woodnymph is a perennial rhizomatous herb that occurs in broadleaf upland forest and North Coast coniferous forest. This species blooms from May through August and is found at elevations from 325 feet to 3,600 feet (100 meters to 1,100 meters). The CNDDDB has only one, undated, record of this species occurring in the Project vicinity, with the location given only as Sisson, currently City of Mt. Shasta (CDFW 2015).

Suitable habitat for woodnymph occurs in the Project area, and the Project is at an elevation below the known range for this species. Potential for the species to occur in the Project area is moderate

**Northern Adder's Tongue (*Ophioglossum pusillum*)**

Northern adder's tongue is a rhizomatous herb that occurs in marshes, swamps, and mesic valley and foothill grassland. This species blooms in July, and occurs at elevations from 3,300 feet to 6,500 feet (1000 meters to 2,000 meters). The CNDDDB has one recorded occurrence of this species in the Project vicinity, dating from 1894 and mapped to Sisson, in the vicinity of an open swamp in what is now the Mt. Shasta Fish Hatchery approximately 0.5 mile northeast of the Project (CDFE 2015).

Suitable habitat for northern adder's tongue occurs in the Project area; however, the species has not been recorded in the Project vicinity for over 100 years. Northern adder's tongue is confirmed absent from the Project area. Potential for the species to occur in the Project area is moderate.

**Thread-leaved Beardtongue (*Penstemon filiformis*)**

Thread-leaved beardtongue is a perennial herb that occurs occasionally on serpentine, also in dry stony sites, grassy openings, meadows, cismontane woodland, and lower montane coniferous forest. This species blooms from May through July and occurs at elevations from 1,475 feet to 6,000 feet (450 meters to 1,830 meters). The CNDDDB records three occurrences of this species in the Project vicinity, the nearest of which is mapped along the Everett Memorial Highway approximately 2.5 miles north of the City of Mt. Shasta and 5.5 miles from the Project (CDFW 2015).

Suitable habitat occurs in the Project area. Potential for thread-leaved beardtongue to occur in the Project area is moderate.

**Cook's Phacelia (*Phacelia cookei*)**

Cook's phacelia is an annual herb that occurs in disturbed areas of loose, ashy, volcanic sand, at the edges of old roads, in great basin scrub, and lower montane coniferous forest. This species blooms from June through July and occurs at elevations from 3,600 feet to 5,600 feet (1,095 meters to 1,700 meters). The CNDDDB has one record of this species occurring in the Project vicinity, based on a 1965 collection and mapped generally to the area of Bolam Creek on the north side of Mt. Shasta and approximately 13 miles northeast of the Project (CDFW 2015).

Suitable habitat in the form of lower montane coniferous forest occurs in the Project area, but they are fragmented. Suitable habitat for Cook's phacelia occurs in the Project area. Potential for Cook's phacelia to occur in the Project area is low.

**Marsh Skullcap (*Scutellaria galericulata*)**

Marsh skullcap is a perennial rhizomatous herb that occurs in marshes, swamps, seeps, meadows, and lower montane coniferous forests. This species blooms from June through September and is found at elevations from 0 feet to 6,900 feet (0 meters to 2,100 meters). The CNDDDB has only one record of this species occurring in the Project vicinity, from a collection made in 1894 and mapped generally to Sisson, currently the City of Mt. Shasta (CDFW 2015).

Suitable habitat for marsh skullcap occurs in the Project area. Potential for marsh skullcap to occur in the Project area is high.

**Cylindrical Trichodon (*Trichodon cylindricus*)**

Cylindrical trichodon is a moss that occurs on sandy exposed soil and roadside banks in broadleaf upland forest, meadows, seeps, and upper montane coniferous forest. This species is found at elevations from 165 feet to 6,550 feet (50 meters to 2,000 meters). The CNDDDB has one record of this species occurring in the Project vicinity, near Castle Lake approximately 6 miles south of the Project (CDFW 2015).

Suitable habitat occurs in the Project area. Potential for cylindrical trichodon to occur in the Project area is moderate.

**Siskiyou clover (*Trifolium siskiyouense*)**

Siskiyou clover is a perennial herb that occurs in meadows and seeps on mesic soils, and sometime along streambanks. This species is found at elevations of 2,887 to 4,920 feet (880 to 1,500 meters).

Suitable habitat occurs in the Project area. Potential for Siskiyou clover to occur in the Project area is high.

**TABLE 4.5-1 SPECIAL-STATUS PLANT SPECIES AND POTENTIAL TO OCCUR WITHIN THE PROJECT AREA**

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Anthoxanthum nitens</i> <i>spp.nitens</i> nodding vanilla grass	Fed: None State: None CNPS: List 2B.3	Perennial rhizomatous herb. Occurs in meadows and seeps, from 1,500 to 1,895 meters in elevation.	April – July	Absent. The project area is below the known elevation range for the species.
<i>Arctostaphylos</i> <i>klamathensis</i> Klamath manzanita	Fed: None State: None CNPS: List 1B.2 BLM: Sensitive	Evergreen shrub. Occurs in rocky, serpentinite or gabbroic soils in chaparral, lower montane coniferous forest, sub-alpine coniferous forest, upper montane coniferous forest. From 1,570 – 2,250 meters in elevation.	May – August	Absent. The project area is below the known elevation range for the species.
<i>Asarum marmoratum</i> marbled wild ginger	Fed: None State: None CNPS: List 2B.3	Rhizomatous herb. Occurs in lower montane coniferous forest, from 200 – 1,800 meters in elevation.	April – August	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Balsamorhiza lanata</i> woolly balsamroot	Fed: None State: None CNPS: List 1B.2 BLM: Sensitive	Perennial herb. Occurs in rocky volcanic soils in cismontane woodland, from 800 – 1,895 meters in elevation.	April – June	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Botrychium crenulatum</i> scalloped moonwort	Fed: None State: None CNPS: List 2B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in bogs and fens, meadows and seeps, freshwater marshes and swamps, lower and upper montane coniferous forests. From 1,265 – 3,280 meters in elevation.	June – September	Absent. The project area is below the known elevation range for the species.
<i>Botrychium minganense</i> Mingan moonwort	Fed: None State: None CNPS: List 2B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in mesic habitats such as bogs and fens, streambanks in mixed, lower, and upper montane coniferous forests. 1,455 – 2,180 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Botrychium pinnatum</i> northwestern moonwort	Fed: None State: None CNPS: List 2B.3 FS: Sensitive	Perennial rhizomatous herb. Occurs in lower montane coniferous forest and meadows and seeps and upper montane coniferous forest, from 1,770 – 2,040 meters in elevation.	July – October	Absent. The project area is below the known elevation range for the species.
<i>Botrychium pumicola</i> pumice moonwort	Fed: None State: None CNPS: List 2B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in alpine boulder and rock field communities, and subalpine coniferous forest at 2,750 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Botrypus virginianus</i> rattlesnake fern	Fed: None State: None CNPS: List 2B.2	Perennial herb. Occurs in bogs, fens, lower montane coniferous forest, meadows and seeps, and riparian forests along streams, from 715 – 1,355 meters in elevation.	June – September	High. Suitable habitat for this species occurs within the project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Calochortus greenei</i> Greene's mariposa lily	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Perennial bulbiferous herb. Occurs in cismontane woodland, meadows, seeps, pinyon and Juniper woodland and upper montane coniferous forest, on volcanic soils, from 1,035 – 1,890 meters in elevation.	June – August	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Campanula shetleri</i> Castle Crags harebell	Fed: None State: None CNPS: List 1B.1 BLM/FS: Sensitive	Perennial rhizomatous herb. Occurs in rocky soils in lower montane coniferous forest from 1,220 – 1,830 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Campanula wilkinsiana</i> Wilkins harebell	Fed: None State: None CNPS: List 1B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in meadows, seeps, and upper montane and subalpine coniferous forest, from 1,270 – 2,600 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Cardamine angulata</i> seaside bittercress	Fed: None State: None CNPS: List 2B.1	Perennial herb. Occurs in wet areas and streambanks in lower montane coniferous forests and North Coast coniferous forest, from 65 – 915 meters in elevation.	March – July	Absent. The project area is above the known elevation range for the species.
<i>Carex limosa</i> mud sedge	Fed: None State: None CNPS: List 2B.2	Perennial rhizomatous herb. Occurs in bogs, fens, upper and lower montane coniferous forest, meadows, seeps, marshes, and swamps, from 1,200 – 2,700 meters in elevation.	June – August	Absent. The project area is below the known elevation range for the species.
<i>Castilleja elata</i> Siskiyou paintbrush	Fed: None State: None CNPS: List 2B.2	Perennial hemiparasitic herb. Occurs in bogs, fens, seeps, and lower montane coniferous forest; limited to mesic, often serpentine, soils up to 1,750 meters in elevation.	May – August	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Chaenactis douglasii</i> <i>var. alpina</i> alpine dusty maidens	Fed: None State: None CNPS: List 2B.3	Perennial herb occurring in alpine boulder and rock field, on granitic soils. From 2,865 – 3,400 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Chaenactis suffrutescens</i> Shasta chaenactis	Fed: None State: None CNPS: List 1B.3 BLM/FS: Sensitive	Perennial herb. Occurs in upper and lower montane coniferous forest, on sandy serpentinite soils from 750 – 2,800 meters in elevation.	May – September	Absent. The project area does not support the appropriate soils required for the species.
<i>Clarkia borealis</i> ssp. <i>borealis</i> northern clarkia	Fed: None State: None CNPS: List 1B.1 BLM/FS: Sensitive	Annual herb. Occurs in chaparral, cismontane woodland and lower montane coniferous forest, often found on road cuts, from 400 – 1,390 meters in elevation.	June – September	Moderate. Some suitable habitat for this species occurs within the Project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Claytonia umbellata</i> Great Basin claytonia	Fed: None State: None CNPS: List 2B.3	Perennial herb occurring in subalpine coniferous forest, generally on talus, from 1,705 – 3,500 meters in elevation.	May – August	Absent. The project area is below the known elevation range for the species.
<i>Cordylanthus tenuis</i> <i>ssp. pallescens</i> pallid bird's-beak	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Annual hemiparasitic herb. Occurs in gravelly or volcanic alluvium in lower montane coniferous forest from 695 – 1,645 meters in elevation.	July – September	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Cuscuta jepsonii</i> Jepson's dodder	Fed: None State: None CNPS: List 1B.2	Annual parasitic vine occurring in volcanic alluvium in coniferous forest, usually along streambanks, from 695 – 1,645 meters in elevation	July – September	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Draba aureola</i> golden alpine draba	Fed: None State: None CNPS: List 1B.3	Perennial herb. Occurs in alpine boulder and rock field, and subalpine coniferous forest, on serpentine or volcanic outcrops. From 2,000 – 3,355 meters in elevation.	July – August	Absent. The project area is below the known elevation range for the species.
<i>Draba carnosula</i> Mt. Eddy draba	Fed: None State: None CNPS: List 1B.2 FS: Sensitive	Perennial herb. Subalpine coniferous forest, upper montane coniferous forest, on rocky or serpentinite soils. From 1,935 – 3,000 meters in elevation.	July – August	Absent. The project area is below the known elevation range for the species.
<i>Epilobium oregonum</i> Oregon fireweed	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Perennial herb. Occurs in bogs and fens, meadows and seeps, and upper and lower montane coniferous forest, on mesic soils. From 500 – 2,240 meters in elevation.	June – September	High. Suitable habitat for this species occurs within the Project area.
<i>Epilobium siskiyouense</i> Siskiyou fireweed	Fed: None State: None CNPS: List 1B.3 BLM: Sensitive	Perennial herb occurring in alpine boulder and rock field, subalpine and upper montane coniferous forest on rocky, on rocky or serpentinite soils. From 1,700 – 2,500 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Erigeron bloomeri</i> var. <i>nudatus</i> Waldo daisy	Fed: None State: None CNPS: List 2B.3	Perennial herb. Occurs in lower and upper montane coniferous forest, on serpentinite soils, from 600 – 2,300 meters in elevation.	June – July	Absent. The project area does not support the appropriate soils required for the species.
<i>Erigeron nivalis</i> Snow fleabane daisy	Fed: None State: None CNPS: List 2B.3	Perennial herb. Occurs in volcanic rock outcrops in cracks and crevices, alpine boulder and rock fields, meadows and seeps, and subalpine coniferous forest from 1,735 – 2,900 meters in elevation.	July – August	Absent. The project area is below the known elevation range for the species.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Eriogonum alpinum</i> trinity buckwheat	Fed: None State: <b>Endangered</b> CNPS: List 1B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in subalpine coniferous forest, upper montane coniferous forest, alpine boulder and rock fields; rocky soils and scree slopes, slopes in open and windswept areas on serpentine substrate. From 2,185 – 2,900 meters in elevation.	June – September	Absent. The project area is below the known elevation range for the species.
<i>Eriogonum pyrolifolium</i> var. <i>pyrolifolium</i> pyrola-leaved buckwheat	Fed: None State: None CNPS: List 2B.3	Perennial herb. Alpine boulder and rock fields, sandy or gravelly sites, sometimes on pumice. From 1,675 – 3,200 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Erythranthe trinitensis</i> pink-margined monkeyflower	Fed: None State: None CNPS: List 1B.3	Annual herb occurring in cismontane woodland, upper and lower montane coniferous forest, and meadows and seeps, often on serpentinite and along roadsides, from 400 to 2,285 meters in elevation.	June – July	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Erythronium klamathense</i> Klamath fawn lily	Fed: None State: None CNPS: List 2B.2	Perennial bulbiferous herb. Occurs in meadows, seeps and upper montane coniferous forest, from 1,200 to 1,850 meters in elevation.	April – July	Absent. The project area is below the known elevation range for the species.
<i>Erythronium revolutum</i> coast fawn lily	Fed: None State: None CNPS: List 2B.2	Perennial bulbiferous s herb. Occurs in bogs, fens, and along mesic stream banks in broadleaf upland forest and north coast coniferous forest, up to 1,600 meters in elevation.	March – July	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Eurybia merita</i> sub-alpine aster	Fed: None State: None CNPS: List 2B.3 BLM: Sensitive	Perennial herb. Occurs in upper montane coniferous forest in the USGS Mt. Eddy Quadrangle. Easily confused with <i>Eurybia radulina</i> . Elevation 1,300 – 2,000 meters. in elevation.	July – August	Absent. The project area is below the known elevation range for the species.
<i>Galium serpenticum</i> ssp. <i>scotticum</i> Scott Mountain bedstraw	Fed: None State: None CNPS: List 1B.2 BLM: Sensitive	Perennial herb. Occurs in lower montane coniferous forest from 1,000 to 2,075 meters in elevation.	May – August	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Geum aleppicum</i> Aleppo avens	Fed: None State: None CNPS: List 2B.2	Perennial herb. Great basin scrub, lower montane coniferous forest and meadows and seeps from 450 – 1,500 meters in elevation.	June – August	High. Suitable habitat for this species occurs within the Project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Howellanthus dalesianus</i> Scott Mountain howellanthus	Fed: None State: None CNPS: List 4.3	Perennial herb. Occurs in upper and lower montane coniferous forest, meadows, subalpine coniferous forest, dry meadows, or openings in coniferous forest communities; on serpentine soils. From 1,015 to 2,105 meters in elevation.	May – July	Absent. The project area does not support the appropriate soils required for the species.
<i>Hulsea nana</i> little hulsea	Fed: None State: None CNPS: List 2B.3	Perennial herb. Alpine boulder and rock fields and sub-alpine coniferous forest with rocky, gravelly volcanic soils. From 1,720 – 3,355 meters in elevation.	July – August	Absent. The project area is below the known elevation range for the species.
<i>Hymenoxys lemmoni</i> alkali hymenoxys	Fed: None State: None CNPS: List 2B.2	Perennial herb. Occurs in great basin scrub, lower montane coniferous forest and sub-alkaline meadows and seeps from 240 – 3,390 meters in elevation.	June – August	Low. Marginal suitable habitat for this species occurs within the Project area.
<i>Ilamna bakeri</i> Baker's globe mallow	Fed: None State: None CNPS: List 4.2	Perennial herb. Occurs in chaparral, Great Basin scrub, lower montane coniferous forest, and pinyon-juniper woodland; on rocky loam or volcanic soils, and often in burned areas. From 1,000 – 2,500 meters in elevation.	June – September	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Ivesia longibracteata</i> Castle Crags ivesia	Fed: None State: None CNPS: List 1B.3 BLM/FS: Sensitive	Perennial herb. Occurs on granitic, rocky soils in lower montane coniferous forest from 1,200 – 1,400 meters in elevation. Known only from Castle Crags.	June	Absent. The project area is below the known elevation range for the species.
<i>Ivesia pickeringii</i> Pickering's ivesia	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Perennial herb. Occurs in mesic lower montane coniferous forest, meadows and seeps. Typically associated with serpentine soils. Elevation ranges from 800 – 1,510 meters in elevation	June – August	Low. Marginal suitable habitat for this species occurs within the Project area.
<i>Lewisia kelloggii</i> ssp. <i>hutchisonii</i> Hutchinson's lewisia	Fed: None State: None CNPS: List 3.2	Perennial herb occurring in openings and ridgetops in upper montane coniferous forest, meadows, and seeps, in mesic soils, often on slate or rhyolite tuff. From 765 – 2,365 meters in elevation.	May – August	Low. Marginal suitable habitat for this species occurs within the Project area.
<i>Lewisia kelloggii</i> ssp. <i>kelloggii</i> Kellogg's lewisia	Fed: None State: None CNPS: List 3.2	Perennial herb occurring in openings and ridgetops in upper montane coniferous forest, often on slate and sometimes rhyolite tuff. From 1,465 – 2,365 meters in elevation.	May – August	Absent. The project area is below the known elevation range for the species.
<i>Lomatium peckianum</i> Peck's lomatium	Fed: None State: None CNPS: List 2B.2	Perennial herb. Occurs in lower montane coniferous forest, chaparral, cismontane woodland and pinyon and Juniper woodland with volcanic soils, from 700 – 1,800 meters in elevation.	April – May	Moderate. Some suitable habitat for this species occurs within the Project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Meesia triquetra</i> three-ranked hump moss	Fed: None State: None CNPS: List 4.2	Moss. Occurs in bogs and fens, meadows and seeps, upper montane coniferous forest and sub-alpine coniferous forest on mesic soils, from 1,300 – 2,953 meters in elevation.	July	Absent. The project area is below the known elevation range for the species.
<i>Meesia uliginosa</i> broad-nerved hump moss	Fed: None State: None CNPS: List 2B.2 FS: Sensitive	Moss. Occurs in bogs, fens, seeps, and on damp soils in meadows, upper montane coniferous forest and sub-alpine coniferous forest on damp soil, from 1,210 – 2,804 meters in elevation.	October	Absent. The project area is below the known elevation range for the species.
<i>Moneses uniflora</i> woodnymph	Fed: None State: None CNPS: List 2B.2	Perennial rhizomatous herb. Occurs in broadleaved upland forests and North Coast coniferous forests, from 100 – 1,100 meters in elevation.	May – August	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Ophioglossum pusillum</i> northern adder's tongue	Fed: None State: None CNPS: List 1B.2 FS: Sensitive	Perennial rhizomatous herb. Occurs in meadows and seeps, and marsh and swamp margins, from 1,000 – 2,000 meters in elevation.	July	High. Suitable habitat for this species occurs within the Project area.
<i>Orthocarpus pachystachyus</i> Shasta orthocarpus	Fed: None State: None CNPS: List 1B.1 BLM: Sensitive	Annual herb. Occurs in great basin scrub, meadows, seeps, and valley and foothill grasslands, at approximately 850 meters in elevation.	May	Absent. The project area is above the known elevation range for the species.
<i>Parnassia cirrata var. intermedia</i> Cascades grass-of-Parnassus	Fed: None State: None CNPS: List 1B.3 FS: Sensitive	Perennial herb. Occurs in bogs, fens, meadows and seeps with rocky, serpentine soils, from 780 – 1,980 meters in elevation.	August – September	Absent. The project area does not support the appropriate soils required for the species.
<i>Penstemon filiformis</i> thread-leaved beardtongue	Fed: None State: None CNPS: List 1B.3 BLM: Sensitive	Perennial herb. Occurs in rocky cismontane woodland and lower montane coniferous forest, from 450 – 1,875 meters in elevation	May – August	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Phacelia cookei</i> Cook's phacelia	Fed: None State: None CNPS: List 1B.3 BLM/FS: Sensitive	Annual herb. Occurs in great basin scrub and lower montane coniferous forest on sandy, volcanic soils, from 1,095 – 1,700 meters in elevation.	June – July	Low. Marginal suitable habitat for this species occurs within the Project area.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Phacelia leonis</i> Siskiyou phacelia	Fed: None State: None CNPS: List 1B.3 BLM: Sensitive	Annual herb. Occurs in meadows, seeps and openings in upper montane coniferous forest, often on serpentinite soils, from 1,200 to 2,000 meters in elevation.	June – August	Absent. The project area is below the known elevation range for the species.
<i>Pinguicula macroceras</i> horned butterwort	Fed: None State: None CNPS: List 2B.2	Perennial carnivorous herb. Occurs in bogs and fens, on serpentinite soils, from 40 – 1,920 meters in elevation.	April – June	Absent. The project area does not support the appropriate soils required t for the species.
<i>Polemonium eddyense</i> Mt. Eddy sky pilot	Fed: None State: None CNPS: List 1B.2 BLM: Sensitive	Perennial herb. Occurs in alpine boulder and rock fields, subalpine coniferous forest, gravelly slopes and rocky ledges on serpentinite or peridotite, rocky soils. From 2,480 to 2,750 meters in elevation.	June – August	Absent. The project area is below the known elevation range for the species.
<i>Polemonium pulcherrimum var. shastense</i> Mt. Shasta sky pilot	Fed: None State: None CNPS: List 1B.2	Perennial herb occurring in alpine boulder and rock field, and subalpine and upper montane coniferous forest, sometimes on volcanic soils. From 2,175 – 3,900 meters in elevation.	June – September	Absent. The project area is below the known elevation range for the species.
<i>Polystichum lonchitis</i> northern holly fern	Fed: None State: None CNPS: List 3	Perennial rhizomatous herb. Occurs in subalpine and upper montane coniferous forest, on granitic or carbonate soils. From 1,800 – 2,600 meters in elevation.	June – September	Absent. The project area is below the known elevation range for the species.
<i>Potentilla cristae</i> crested potentilla	Fed: None State: None CNPS: List 1B.3	Perennial herb. Occurs in alpine boulder and rock fields, subalpine coniferous forest, seasonally wet swales and seeps, gravelly or rocky sites, often on serpentine. From 1,800 – 2,800 meters in elevation.	August – September	Absent. The project area is below the known elevation range for the species.
<i>Ptilidium californicum</i> Pacific fuzzwort	Fed: None State: None CNPS: List 4.3 BLM: Sensitive	Liverwort occurring in lower montane coniferous forest and upper montane coniferous forest growing as an epiphyte on trees, fallen and decaying logs and stumps, and occasionally on humus on boulders, at approximately 1,800 meters in elevation.	May – August	Absent. The project area is below the known elevation range for the species.
<i>Raillardella pringlei</i> showy raillardella	Fed: None State: None CNPS: List 1B.2 BLM/FS: Sensitive	Perennial rhizomatous herb. Occurs in meadows, seeps, bogs, fens and upper montane coniferous forest, from 1,200 to 2,290 meters in elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Rosa gymnocarpa var. serpentina</i> Gasquet rose	Fed: None State: None CNPS: List 1B.3	Perennial rhizomatous shrub. Occurs in chaparral and cismontane woodland, on serpentinite soils, often on roadsides, ridges, streambanks, and openings in the vegetation. From 400 – 1,725 meters in elevation.	April – June	Absent. The project area does not support the appropriate soils required t for the species.

SPECIES	STATUS	HABITAT	BLOOMING PERIOD	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Scutellaria galericulata</i> marsh skullcap	Fed: None State: None CNPS: List 2B.2	Perennial rhizomatous herb. Occurs in lower montane coniferous forest, meadows and seeps and marshes and swamps, up to 2,100 meters in elevation.	June – September	High. Suitable habitat for this species occurs within the Project area.
<i>Silene suksdorfii</i> Cascade alpine campion	Fed: None State: None CNPS: List 2B.3	Perennial herb. Occurs in alpine boulder and rock fields, subalpine and upper montane coniferous forest; rocky, volcanic soils. From 2,355 – 3,110 meters elevation.	July – September	Absent. The project area is below the known elevation range for the species.
<i>Trichodon cylindricus</i> cylindrical trichodon	Fed: None State: None CNPS: List 2B.2	Moss. Occurs on sandy exposed soil and road banks in broadleaf upland forest, meadows and seeps, and upper montane coniferous forest from 50 to 2,000 meters in elevation.	NA	Moderate. Some suitable habitat for this species occurs within the Project area.
<i>Trifolium siskiyouense</i> Siskiyou clover	Fed: None State: None CNPS: List 1B.1	Perennial herb. Occurs in meadows and seeps on mesic soils, sometimes on streambanks. From 880 – 1,500 meters in elevation.	June – July	High. Suitable habitat for this species occurs within the Project area.
<i>Vaccinium scoparium</i> little-leaved huckleberry	Fed: None State: None CNPS: List 2B.2	Perennial deciduous shrub. Subalpine coniferous forest, rocky areas. From 1,035 – 2,200 meters in elevation.	June – August	Absent. No suitable habitat for this species occurs within the Project area.

**Absent:** Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.

**Low:** Species or sign not observed on the site, but conditions marginal for occurrence.

**Moderate:** Species or sign not observed on the site, but conditions suitable for occurrence and/or an historical record exists in the vicinity.

**High:** Species or sign not observed on the site, but reasonably certain to occur on the site based on conditions, species ranges, and recent records.

**Present:** Species or sign of their presence recently observed on the site.

#### State status

Endangered = listed as Endangered under the California Endangered Species Act

#### CNPS State Rank

- List 1B Plants rare, threatened, or endangered in California and elsewhere
- List 2 Plants rare, threatened, or endangered in California, but more common elsewhere
- List 3 Plants for which more information is needed; a review list
- List 4 Plants of limited distribution; a watch list

#### CNPS threat extension codes

- 1 Seriously endangered in California
- 2 Fairly endangered in California
- 3 Not very endangered in California

### Special-Status Wildlife

Based upon database searches and literature review, the following special-status wildlife species have potential to occur within or in the vicinity of the Project area. The following section describes the distribution, habitat use, and potential for occurrence for each of the species identified.

Based upon database searches and literature review, 30 special-status plant species were identified as potentially occurring within the Project area. Upon further analysis, it was determined that four of these species have no potential to occur based variables, including lack of suitable habitat, and are not discussed further. Wildlife with potential to occur in the Project area are discussed below; potential to occur based on habitat requirements, soils, elevation, and known populations is shown in Table 4.5-2.

#### **Northern Goshawk (*Accipiter gentilis*)**

The northern goshawk breeds in the North Coast Ranges through the Sierra Nevada, Klamath, Cascade, and Warner Mountains, and in Mt. Pinos and the San Jacinto, San Bernardino, and White Mountains (CDFG 2008). It is considered to be well-distributed across the Klamath and Siskiyou Mountains, with an estimate of approximately 1,000 known breeding territories statewide in California (Shuford and Gardali 2008). It typically inhabits mature, dense coniferous forests, primarily ponderosa pine, Jeffrey pine, lodgepole pine, and white fir, at middle and higher elevations, although it can also be found in foothills and deserts, where it will inhabit lower elevation riparian and pinyon-juniper habitats (USFS 2005, CDFG 2008). They may also nest in deciduous trees (USFS 2005).

There is one recorded northern goshawk occurrence within a five-mile radius of the Project, where fledging or nestling activity was observed in 1992, 1995, and 1996 (CDFG 2011, CDFW 2015). There have also been recent nearby occurrences of northern goshawk from 2001, located west of Dunsmuir, where separate nests with fledglings or juveniles were observed each year from 1999 to 2001 (CDFG 2011, CDFW 2015). Northern goshawk has a moderate potential to occur based on the suitable coniferous forest, and this species may use the area as a flyover or foraging area.

#### **Sierra Nevada Mountain beaver (*Aplodontia rufa californica*)**

The Sierra Nevada Mountain beaver occurs in moist environments with moderate- to dense vegetation, specifically in the Pacific Northwest and the Pacific Cascades. This species requires ample surface water or succulent vegetation due to its poor ability to concentrate urine and prefers habitat with abundant willows, alder, and fir; where these species are sparse, the Sierra Nevada mountain beaver can be found in areas with abundant ferns (Beier 1989). This species is herbaceous, and in addition to using these vegetation species as cover from high temperatures the Sierra Nevada mountain beaver will also forage on them as well as on other herbaceous plants, trees, and shrubs.

Sierra Nevada mountain beaver make shallow, extensive tunnel systems, and are active throughout most of the year. Females began to reproduce after 2 years of age and, after a gestation period of approximately one month, give birth in the early spring. The young are weaned within 6 to 8 weeks (NDW 2015). In the Project area, the only recorded observation of Sierra Nevada mountain beaver was in 1898, in Upper Mud Creek on the southeast side of Mount Shasta (CDFW 2015). Suitable habitat occurs in the Project area, and the Sierra Nevada mountain beaver has a moderate potential to occur.

#### **Great blue heron (*Ardea herodias*)**

The great blue heron is a common inhabitant of most of the west coast of the United States, in both shallow estuaries and fresh and saline emergent wetlands, lake margins, tidal flats, and rivers and

streams. This species can also be found in croplands, pastures, and in mountains above foothills. Great blue heron is a colonial nester and commonly utilizes tall trees and large snags, but may also nest on cliffsides and in secluded areas in emergent wetlands in proximity to foraging areas. This species feeds mostly on fish, but may also prey upon small rodents, amphibians, snakes, lizards, insects, crustaceans, and small birds (Granholt, no date; CDFW 2015).

Great blue heron has been recorded in the Project area, most recently in 2007 in a private pond just north of Browns Lake approximately 0.25 mile from the proposed Lassen Substation. Suitable habitat occurs in the Project area, and great blue heron has a high potential to occur.

#### **Pacific Tailed Frog (*Ascaphus truei*)**

The Pacific tailed frog is known to occur west of the Cascade Mountains from southern British Columbia to near Anchor Bay in California's Mendocino County (Stebbins 2003). This species prefers clear, cold, fast-flowing, rocky streams in areas typically dominated by old-growth Douglas-fir, pine, spruce, hemlock, redwood, maple, and alder (Stebbins 2003, Elliott et al. 2009). A rocky substrate is essential for hiding, attaching eggs, and foraging (Elliott et al. 2009). Water temperatures higher than 23 to 24°C are lethal to adults, while tadpoles will avoid temperatures greater than 22°C and will die at water temperatures greater than 30°C (CDFG 2008). This species is not known to venture more than approximately 40 feet from water (CDFG 2008).

Suitable habitat occurs within the Project area. Pacific tailed frog has a moderate potential to occur within the Project area.

#### **Suckley's cuckoo bumble bee (*Bombus suckleyi*)**

Suckley's cuckoo bumble bee is a brood parasite. This species has lost the ability to develop nests and feed their young, and therefore the females invade the nests of other bees, killing the queen and taking over the colony. The female then lays her eggs and forces the workers of the existing colony to feed her and her young. Upon hatching, the young feed upon the larvae of the previous queen, and eventually disperse: the females seek out other nests to parasitize, and the males seek out mates (Hatfield et al. 2015).

Suckley's cuckoo bumble bee is native to the U.S., and its range includes the Pacific coast from Alaska to northern California, and east to Nebraska (CDFW 2015). This species is an obligate nest parasite and its relative abundance depends directly on that of its hosts, and threats include pesticide use, habitat destruction, and climate change. Suckley's cuckoo bumble bee was last recorded in the Project area in 1958; however, other species of bees occur in the area, and therefore suitable habitat may be present. Suckley's cuckoo bumble bee has a moderate potential to occur in the Project area.

#### **Western Yellow-billed Cuckoo (*Coccyzus americanus occidentalis*)**

Historically, the yellow-billed cuckoo was a commonly breeding species in riparian habitat throughout much of California, including small populations along the Shasta River in Siskiyou County. By 1944, the yellow-billed cuckoo had been eliminated from extensive areas "because of removal widely of essential habitat conditions" (Laymon 1988). Breeding populations of greater than five pairs are currently limited to the Sacramento River and the South Fork Kern River. There are several other sites in Southern California where small populations of cuckoos (less than five pairs) breed or possibly breed (Laymon 1988). The yellow-billed cuckoo nests in riparian forest habitats along the floodplains of large river systems. Nests are typically built in willow, cottonwood, box elder, and alder trees, but have also been found in riparian willow-cottonwood habitats with blackberry, nettle, and wild grape understory.

There are historic records of the western yellow-billed cuckoo within the general Project vicinity. One record from 1951 is near the Mt. Shasta State Fish Hatchery, located approximately 0.4 mile from the site of the proposed Lassen Substation. However, the fish hatchery no longer contains any suitable habitat to support this species. There is also one historic record of yellow-billed cuckoo along Shasta River. One individual was collected and several others were observed along the Shasta River approximately four miles northwest of Weed, California in 1899. Subsequent observations of the yellow-billed cuckoo were also made in this area in 1920, and it is thought that the birds may have nested in the willows, alders, and birch along the river at that time. No recent observations of cuckoo presence have been documented along the Shasta River (CDFG 2011, CDFW 2015). There is a low potential for the western yellow-billed cuckoo to occur in the Project area due to the general lack of the complex structured riparian canopies that it requires for nesting and foraging.

#### **Confusion caddisfly (*Cryptochia shasta*)**

Little is known of the ecology and life history of the confusion caddisfly. This species is known from only one type locality; in 1973, a male was collected from a creek near Castle Crag State Park, approximately 7.5 miles south of the Project. Required habitat of this species is unknown; however, larvae of other *Cryptochia* species are found in small, cold, first- and second-order streams where they construct a buoyant case from woody debris. Larvae of other *Cryptochia* species then crawl onto the shore where they are suspected of feeding upon fungi (Shanks, no date).

The confusion caddisfly has one recorded observation dating from 1973 near Castle Crag State Park. Other sensitive *Cryptochia* species (i.e., *Cryptochia denningi* and *C. excella*) have been recorded in Placer, Tulare, and Inyo Counties, and in the Sierra Nevada. Suitable habitat for other *Cryptochia* species is present in the Project area, however, and the confusion caddisfly is considered to have a high potential to occur.

#### **Willow Flycatcher (*Empidonax traillii*)**

Willow flycatchers historically occurred throughout California wherever suitable habitat was present (Craig and Williams 1998). Currently, it is known to occur in wet meadow and montane riparian habitats in the Sierra Nevada and Cascade Ranges, as well as along the Santa Ynez River in Santa Barbara County, several locations in San Diego County, and along the Colorado River (Sedgwick 2000, CDFG 2008). As of 2000, in the Sierra Nevada and Cascade region in California, this species was believed to be restricted to southeastern Shasta County south to northern Kern County, including Alpine, Inyo, and Mono Counties in between (Sedgwick 2000). Characteristic habitat for this species includes willow thickets in or adjacent to standing or running water, typically in valleys, canyon bottoms, mountain seeps, and ponds and lakes (Sedgwick 2000). In California, willow clumps are often preferred.

There are two recent recorded observations of this species from the general Project vicinity. In 2004, six breeding individuals were detected along Pig Creek in an area spanning from 2.3 to 2.8 miles south-southwest of McCloud (CDFG 2011, CDFW 2015), and another site documented in 1992 as having activity. The Project vicinity generally lacks a large amount of willow and riparian habitat that would be capable of supporting this species. Willow flycatcher has a low potential to occur in the Project area.

#### **Western Pond Turtle (*Emys* (= *Clemmys*) *marmorata*)**

The western pond turtle was historically present in most Pacific slope drainages between the Oregon and Mexican borders. Western pond turtles inhabit a variety of aquatic habitats, including rivers, streams, lakes, ponds, wetlands, reservoirs, and brackish estuarine waters. The species is uncommon in high gradient streams (Holland 1991). This species requires emergent basking sites, including

rocks, logs, or emergent vegetation, and have been observed to avoid areas of open water lacking them (Holland 1991). They also require upland nest sites in the vicinity of the aquatic habitat that have the proper thermal environment for incubation.

Suitable habitat for this species occurs within the Project area. Western pond turtle has a moderate potential to occur within the Project area.

#### **Spotted Bat (*Euderma maculatum*)**

The spotted bat is a year-round resident of eastern California, including the southeastern portion of Siskiyou County, and most of Southern California (CDFG 2008). It is present in southern British Columbia and through Washington, Oregon, California, Idaho, Montana, Wyoming, Utah, Colorado, New Mexico, Arizona, Texas, and Mexico (Reid 2006). Spotted bat occurs in variable habits ranging from arid deserts to ponderosa pine forests and grasslands, to elevations of over 10,000 feet (Reid 2006, CDFG 2008). Its preferred roosting habitat is rock crevices in cliffs, but it can also be found in caves or in buildings (CDFG 2008). It may forage up to 50 miles from its roost (Reid 2006).

The recorded occurrence of this species nearest to the Project is approximately 1.25 miles south of the proposed substation site, where individuals were detected by calls in 1993 (CDFW 2015). Individuals were detected by recorded calls at Castle Lake (1993) and Castle Crags State Park (1994). Spotted bat has a moderate potential to occur within the Project area. While there is limited roosting habitat in the Project vicinity, this species may use the Project area for foraging, especially over the various water bodies.

#### **Western Mastiff Bat (*Eumops perotis californicus*)**

The western mastiff bat occurs throughout Southern California, along the coast from Monterey County south, and within the California Central Valley north to the eastern half of Siskiyou County. It occurs in open semi-arid to arid habitats, such as conifer and deciduous woodlands, coastal scrub, annual and perennial grasslands, palm oases, chaparral, desert scrub, and urban areas (CDFG 2008). Roosting generally occurs in crevices in cliff faces, high buildings, trees, and tunnels, with at least 10 feet of space between the roost and the ground to drop-off vertically for flight (Reid 2006, CDFG 2008). This species is non-migratory and will move between different roosts either alone or with a colony of other bats. Individuals may forage up to 15 miles away from their roosts (Reid 2006).

There are two CNDDDB records for this species in the Project vicinity, both from 1993 (CDFW 2015). The closest is at Ney Springs, three miles south of the Project, where between one and three bats were detected, and the second occurrence is in Dunsmuir, where one to three individuals were also detected. Suitable roosting and foraging habitat is present around the Project area, and western mastiff bat has a moderate potential to occur.

#### **American Peregrine Falcon (*Falco peregrinus anatum*)**

Peregrine falcon year-round California range includes almost the entire California coast (excluding Southern California, except near the Salton Sea), northern California counties, including Siskiyou, and the northeastern half of California (CDFG 2008). This species winters in the Central Valley and Southern California. Typical habitat consists of cliffs for nesting and open areas for foraging, with nests typically constructed near water (White et al. 2002). Falcons may also use artificial, man-made habitats for nesting.

Although this species has been categorized as Recovered and delisted on the federal and state levels, the CNDDDB documents occurrence records of the American peregrine falcon as sensitive, and specific locations of occurrences are unavailable. However, the CNDDDB records one observation of

this species in the project vicinity, in the Dunsmuir quadrangle within northern Shasta County (CDFW 2015). Due to the potential for nesting around manmade structures and the various bodies of water (creeks, ponds, and Lake Siskiyou) around the Project area, the American peregrine falcon has a low potential to occur.

**Bald Eagle (*Haliaeetus leucocephalus*)**

The bald eagle is resident throughout much of California, with breeding limited to Butte, Lake, Lassen, Modoc, Plumas, Shasta, Siskiyou, and Trinity Counties. The species is a relatively common local winter migrant at several inland waters in Southern California, and approximately half of the wintering population is in the Klamath Basin. Habitat generally consists of large trees and snags, especially ponderosa pine, within one mile of large water bodies where they can forage.

Bald eagles are considered to be recent occupants in the Shasta and Strawberry Valleys. A nest was discovered at the southeast end of Lake Shastina by CDFG in 1996 (CDFG 2011), although the success of this nest beyond 1997 is unknown. Additionally, a bald eagle nest was monitored at Lake Siskiyou from 1989 to 1997, with fledglings in at least four of these years, although its success since 1997 is also unknown (CDFW 2015). The Project vicinity contains potential nesting, roosting, and foraging habitat for the bald eagle, due to the abundance of tall coniferous trees along the perimeter of the site and the proximity of the Project to Lake Siskiyou. Bald eagle has a low potential to occur in the Project area, but a high potential to occur nearby at Lake Siskiyou.

**Leaden Slug (*Hesperarion plumbeus*)**

Leaden slug is known from only two recorded locations in northeastern Shasta County. The species' holotype was collected in 23000, in Castle Creek, west/northwest of its confluence with South Fork Castle Creek. One paratype was collected the same year, in Root Creek approximately 1.4 miles northwest of its confluence with Castle Creek. Habitat requirements for this species are known only from the habitat from which they were collected: riparian areas along creeks (CDFW 2015).

Suitable habitat occurs in the Project area, and the leaden slug has a moderate potential to occur.

**California Gull (*Larus californicus*)**

In California, the nesting population of California gulls is scattered across the northeastern plateau region and around Mono Lake (CDFG 2008). This species is considered to be a resident only around the San Francisco Bay area and around Siskiyou County, but is a winterer in many places in California, including the Central Valley, the entire California coastline, and areas around the Salton Sea (Winkler 1996). When along the coast, its preferred habitat is characterized by sandy beaches, mudflats, the intertidal zone, areas of marine and estuarine habitat, and freshwater or saltwater wetlands. When inland, this species prefers lacustrine, riverine, and agricultural habitats, as well as landfills and urban landscaped areas (CDFG 2008). It often nests on islets on large interior lakes (CDFW 2015).

There is one recorded occurrence of this species around the Project vicinity, an ongoing documentation of nesting California gulls at Lake Shastina (CDFG 2011, CDFW 2015). This population has ranged from approximately 300 nesting pairs in 1994 to 1,149 nesting pairs in 2009. The California gull has a low potential to nest within the Project area, but could occur as a flyover.

**Silver-haired bat (*Lasiorycteris noctivagans*)**

The silver-haired bat occurs in coastal and montane coniferous forests, valley foothill woodlands, pinyon-juniper woodlands, and valley foothill and montane riparian habitats at elevations below 9,000 feet (2750 meters). This species roosts in hollow trees, snags, buildings, rock crevices, and

under loose bark, and requires streams, ponds, and open brushy areas for foraging. Silver-haired bat also needs access to water due to its poor ability to concentrate urine (Harris 2005).

Although suitable habitat for the silver-haired bat occurs in the Project area, it has not been recorded since 1958 (CDFW 2015). The silver-haired bat has a low potential to occur.

**Pacific marten (*Martes caurina*)**

The Pacific marten is associated with structurally complex, upper montane, late-seral coniferous forests and (Zeilinski et. al. 2015) or mixed evergreen forests with more than 40 percent crown closure. This species requires a variety of different-aged stands, particularly old-growth conifers and snags for denning and cover (CDFW 2015). The Pacific marten may also use burrows, caves, and crevices in rocky areas for denning and cover, in the absence of appropriate forest cover. This species is particularly sensitive to human disturbance, especially habitat fragmentation and destruction. Pacific martens feed primarily on small mammals such as squirrels, chipmunks, mice, shrews, rabbits, hares, and pikka, but may also feed on birds, insects, fruit, and fish (Ahiborn, no date).

The Pacific marten has not been recorded in the Project area since 1973 (CDFW 2015); however, suitable habitat occurs in the Project area, and the Pacific marten has a moderate potential to occur.

**Natural bridge megomphix (*Megomphix californicus*)**

The natural bridge megomphix is a gastropod associated with forested areas, where it has been found in moist leaf litter and under rotting logs, and also with perennial seeps and springs. Little else is known about this species, which was first described by A.G. Smith in 1960. This species is known from several scattered regions in the Great Coast Range of northern California (Applegarth 2000), including within 5 miles of the proposed Project. However, since the last recorded observation of this species in the Project area was in 1941 (CDFW 2015), it is determined that the natural bridge megomphix has a low potential to occur.

**Osprey (*Pandion haliaetus*)**

The osprey breeds across northern California from the Cascade Ranges south to Lake Tahoe and coastally to Marin County (CDFG 2008). It is present throughout the rest of its California range, including the California Coast to the western foothills of the Cascades, and the western edge of southeastern California desert, mainly in the winter (Poole et al. 2002). Known regular breeding locations include Shasta Lake, Eagle Lake, Lake Almanor, and other lakes, reservoirs, and rivers (CDFG 2008). Its habitat is typically characterized by ponderosa pine and mixed conifer close to large bodies of water, such as rivers, lakes, reservoirs, bays, estuaries, and surf, with abundant fish (CDFG 2008).

There are multiple osprey nests recorded within five miles of the Project area from since 2001 (CDFW 2015). The earliest recorded occurrence nearest the Project dates from 2003, and consisted of a nest located in a radio tower near the junction of I-5 and Highway 89; two adults were observed nesting at this location. The remaining occurrences were all detected in 2005. Two of these were located within 0.5 mile of each other, where adult ospreys were observed nesting but did not appear to be caring for any chicks. It is believed that their reproductive efforts failed that year. A third nest was detected, but no activity was observed, and the fourth nest, located on a cellular tower, was observed to be successful (CDFW 2015). The osprey has a moderate potential to occur within the Project area.

**West coast fisher (*Pekania pennanti*)**

The west coast fisher is found in the Cascade Mountains west to the coast from Washington and Oregon, the North Coast from Mendocino County, California north to Oregon; east across the

Klamath, Siskiyou, Trinity, and Marble Mountains, and across the southern Cascade Mountains; and south through the Sierra Nevada (USFWS 2014). This species occupies coniferous forests with intermediate- to large tree stands, and deciduous riparian areas with a high percent of canopy closure. West coast fisher requires cavities, snags, logs, and rocky areas for both cover and denning (CDFW 2015).

West coast fisher has been observed multiple times in the Project area as recently as 2009 (CDFW 2015). Suitable habitat for this species occurs in the Project area, and the west coast fisher has a moderate potential to occur.

#### **Foothill Yellow-legged Frog (*Rana boylei*)**

The foothill yellow-legged frog is distributed from Oregon west of the Cascades down into the Coast Range and Sierra Nevada Mountains to the Transverse Mountains of Los Angeles County (CDFG 2008, Elliott et al. 2009). However, it may be extirpated from Southern California and has disappeared across much of its range (Stebbins 2003). It requires slow-moving streams with riffles and a rocky substrate particularly abundant in cobble (Elliott et al. 2009, CDFW 2015). Surrounding habitat may consist of woodland, chaparral, or forest (Stebbins 2003). It has been known to venture up to 165 feet away from water.

There are several creeks in the Project vicinity that have the potential to support this species. Multiple recorded observations from the last decade are located within a five-mile radius of the Project area, including one approximately 0.4 mile away at the Mt. Shasta State Fish Hatchery (CDFW 2015). Foothill yellow-legged frog has a high potential to occur in the Project area.

#### **Cascades Frog (*Rana cascadae*)**

In California, the Cascade frog is distributed from the Shasta-Trinity region eastward toward the Modoc Plateau and southward to the Lassen region and the upper Feather River system (Stebbins 2003). Preferred habitats include montane aquatic habitats, such as mountain lakes, small streams, and ponds (CDFW 2015), as well as moist meadows and wetlands (Elliott et al. 2009). In northern California, known populations of this species seem to be restricted to elevations higher than 1,220 meters (4,000 feet; Garwood and Welsh Jr. 2007). Recent surveys from Butte County northward through the Lassen National Park region to the Modoc Plateau area of eastern Siskiyou County failed to reveal any Cascades frogs at localities where they were historically known to occur. Only two adults of this taxon were found in each of two recent survey years in one location in Lassen Volcanic National Park. Surveys in the upper McCloud River system found moderate to abundant populations in lakes and slow stream channels that contained few or no fish.

There are no recent occurrences of this species within five miles of the Project area, although there are two historical reported occurrences within this buffer (CDFW 2015), with several more recorded sightings located just outside the five-mile search radius. The Project area includes some suitable habitat for the Cascade frog, but the species does not appear to be observed within or in the vicinity of the proposed Project. Cascades frog has a moderate potential to occur.

#### **Castle Crags rhyacophilan caddisfly (*Rhyacophila lineata*)**

Little is known of the Castle Crags rhyacophilan caddisfly. This species is known from only one recorded observation in 1950, when one male was collected in Castle Crags State Park (CDFW 2015). Specific habitat requirements of this species are unknown, as is the range, but habitat requirements for other species within this genus include a wide variety of running-water habitats, and some species are adapted to intermittent streams (Shanks, no date).

Habitat for *Rhyacophila* spp. occurs in the Project area (e.g. Cold Creek and Big Springs Creek), and the Castle Crags rhyacophilan caddisfly has a moderate potential to occur.

**Bilobed rhyacophilan caddisfly (*Rhyacophila mosana*)**

Like the Castle Crags rhyacophilan caddisfly, little is known of the bilobed rhyacophilan caddisfly. This species is known from only one recorded observation made in 1965, in Castle Crags State Park (CDFW 2015). Specific habitat requirements of this species are unknown, as is the range, but habitat requirements for other species within this genus include a wide variety of running-water habitats, and some species are adapted to intermittent streams (Shanks, no date).

Habitat for *Rhyacophila* spp. occurs in the Project area (e.g. Cold Creek and Big Springs Creek), and the Castle Crags rhyacophilan caddisfly has a moderate potential to occur.

**Siskiyou hesperian (*Vespericola sierranus*)**

Siskiyou hesperian is a freshwater mollusk distributed in Oregon near Upper Klamath Lake, Crater Lake National Park, and Klamath River in the Rogue River National Forest (Stone 2009); and in California from one recorded observation in the Shasta River two miles north of the City of Weed (CDFW 2015). This species occurs in perennially moist riparian habitat including seeps, springs, deep leaf litter along streambanks, and under debris and rocks. Siskiyou Hesperian is most common in the lower portions of moist valleys, ravines, gorges, or talus in area not subject to regular flooding, and may also occur in areas with running water or alongside streams and spring pools (Stone 2009).

Suitable habitat for Siskiyou Hesperian occurs in the Project area, and this species has a moderate potential to occur.

**Sierra Nevada Red Fox (*Vulpes vulpes necator*)**

The Sierra Nevada red fox is distributed from the Cascade Mountains south into the Sierra Nevada Range. Relatively little is known of the life history of the Sierra Nevada red fox, but it is assumed that its habits are similar to those of other red foxes. Sightings of the subspecies have been reported from between 5,000 to 7,000 feet elevation. The Sierra Nevada red fox utilizes a variety of habitats from wet meadows to forested areas. Preferred habitat types include red fir, lodgepole pine, subalpine fir, and mixed conifer types (Schempf and White 1977).

There are no records of this species within five miles of the Project area, but there are three in the general vicinity. The most recent of these are from 2006, where one adult was observed in the Shasta National Forest north of McCloud, and another adult was observed along Highway 89, 1 mile north of McCloud. In 1990, an adult was observed in the Shasta National Forest along U.S. Forest Service (USFS) Route 40N25, approximately 5.25 miles northeast of the Project. The other two records are from 1904, where a single Sierra Nevada red fox was captured on Mount Shasta, and 1922-1923, where four foxes were captured at a USFS lookout post on Mount Eddy (CDFW 2015). There is limited habitat to support this species in the Project area, though suitable habitat still remains outside the Project area. The Sierra Nevada red fox has a low potential to occur.

**TABLE 4.5-2 SPECIAL-STATUS ANIMAL SPECIES AND POTENTIAL TO OCCUR WITHIN THE PROJECT AREA**

SPECIES	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Accipiter gentilis</i> northern goshawk	Fed: None State: SSC BLM: Sensitive FS: Sensitive	Coniferous forests, particularly red fir, lodgepole pine, Jeffrey pine, and aspens. Usually nests on north-facing slopes.	Moderate. Some suitable nesting and foraging habitat and prey base occurs within the Project area.
<i>Aplodontia rufa californica</i> Sierra Nevada mountain beaver	Fed: None State: SSC	Occurs in riparian scrub, riparian forest, and riparian woodland.	Moderate. Some suitable habitat occurs within the Project area.
<i>Ardea herodias</i> great blue heron	Fed: None State: None	Found in brackish and freshwater marsh, swamps and wetlands, and riparian forests.	High. Suitable habitat occurs within the Project area.
<i>Ascaphus truei</i> Pacific tailed frog	Fed: None State: SSC	Occurs in montane hardwood-conifer, redwood, Douglas-fir, and ponderosa pine habitats. Restricted to perennial streams. Tadpoles require water temperatures below 15° C.	High. Suitable habitat occurs within the Project area.
<i>Bombus suckleyi</i> Suckley's cuckoo bumble bee	Fed: None State: None	A nest parasite, this species occurs where other bumble bees are present in numbers.	Moderate. Some suitable habitat occurs within the Project area.
<i>Coccyzus americanus occidentalis</i> western yellow-billed cuckoo	Fed: <b>THR</b> State: <b>END</b> BLM: Sensitive	Nests in multi-layered riparian habitat with canopies of willow and cottonwood with understories of blackberry, nettles, or wild grape.	Low. Marginal suitable habitat occurs within the Project area.
<i>Cryptochia shasta</i> confusion caddisfly	Fed: None State: None	Requires small, cold first-order and second-order streams.	High. Suitable habitat occurs within the Project area.
<i>Cypseloides niger</i> black swift	Fed: None State: SSC	Forms small colonies on cliffs near or behind waterfalls in canyons or on bluffs.	Absent. No suitable habitat occurs within the Project area.
<i>Empidonax traillii</i> willow flycatcher	Fed: None State: <b>END</b>	Nests in thick riparian habitat dominated by willows.	Low. Marginal suitable habitat occurs within the Project area.

SPECIES	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Emys marmorata</i> western pond turtle	Fed: None State: SSC	Occurs primarily in ponds, marshes, or slow-flowing rivers, streams, and irrigation ditches. Requires basking sites inside the water or on the bank and requires sandy banks or grassy fields within 0.5 km for egg-laying.	Moderate. Some suitable habitat occurs within the Project area.
<i>Euderma maculatum</i> spotted bat	Fed: None State: SSC BLM: Sensitive FS: Sensitive	Roosts in crevices in cliff faces, high buildings, trees, and tunnels in a range of arid and semi-arid habitats.	Moderate. Some suitable habitat occurs within the Project area.
<i>Eumops perotis californicus</i> western mastiff bat	Fed: None State: SSC BLM: Sensitive	Roosts in crevices in cliff faces, high buildings, trees, and tunnels in a range of arid and semi-arid habitats, including chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland.	Moderate. Some suitable habitat occurs within the Project area.
<i>Falco peregrinus anatum</i> American peregrine falcon	Fed: Delisted State: FP	Nests in scrapes, depressions, or ledges in open areas near water or on cliffs, dunes, or man-made structures.	Low. Marginal suitable habitat occurs within the Project area.
<i>Gulo gulo</i> California wolverine	Fed: None State: THR, FP FS: Sensitive	High elevation caves, logs, or burrows with available nearby water. Hunts in open areas.	Absent. No suitable habitat occurs within the Project area.
<i>Haliaeetus leucocephalus</i> bald eagle	Fed: Delisted State: END, FP BLM: Sensitive FS: Sensitive	Nests in large, open trees, especially ponderosa pines, generally within one mile of rivers or open water for foraging.	Low. Marginal suitable habitat occurs within the Project area.
<i>Hesperarion plumbeus</i> leaden slug	Fed: None State: None	Found in riparian vegetation along creeks.	Moderate. Some suitable habitat occurs within the Project area.
<i>Larus californicus</i> California gull	Fed: None State: WL	Nests in colonies on islets in large interior lakes.	Low. Marginal suitable habitat occurs within the Project area.
<i>Lasionycteris noctivagans</i> silver-haired bat	Fed: None State: None	Found in lower montane coniferous forest, old-growth forest, and riparian forest.	Low. Marginal suitable habitat occurs within the Project area.

SPECIES	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Lepus americanus klamathensis</i> Oregon snowshoe hare	Fed: None State: SSC	Thick patches of alder and willow in riparian areas or of conifers, above the yellow pine zone.	Absent. No suitable habitat occurs within the Project area. This species occurs at elevations above the Project area.
<i>Martes caurina</i> Pacific marten	Fed: None State: None FS: Sensitive	Uses cavities, snags, logs, and rocky areas in large spans of mature, dense, coniferous or deciduous forests, usually old-growth.	Moderate. Some suitable habitat occurs within the Project area.
<i>Megomphix californicus</i> natural bridge megomphix	Fed: None State: None FS: Sensitive	Found in old-growth and riparian forest, preferring moist valley, ravines, gorges, and talus sites near persistent water.	Low. Marginal suitable habitat occurs within the Project area.
<i>Ochotona princeps schisticeps</i> gray-headed pika	Fed: None State: None	Found in alpine talus and scree slopes.	Absent. No suitable habitat occurs within the Project area.
<i>Pandion haliaetus</i> osprey	Fed: None State: WL	Nests in trees within 15 miles of water with high fish abundance, such as the ocean, lakes, or streams.	Moderate. Some suitable habitat occurs within the Project area.
<i>Pekania pennanti</i> west coast fisher	Fed: <b>Proposed THR</b> State: <b>Candidate THR</b> BLM: Sensitive FS: Sensitive	Uses cavities, snags, logs, and rocky areas in large spans of mature, dense, coniferous or deciduous forests, usually old-growth.	Moderate. Some suitable habitat occurs within the Project area.
<i>Rana boylei</i> foothill yellow-legged frog	Fed: None State: SSC BLM: Sensitive FS: Sensitive	Occurs in a large number of habitats with partly-shaded, shallow streams and riffles with rocky substrate.	High. Suitable habitat occurs within the Project area.
<i>Rana cascadae</i> Cascades frog	Fed: None State: SSC FS: Sensitive	Montane aquatic habitats, including moist meadows, open wetlands, streams, pools, ponds, and lakes, as well as open coniferous forests. Requires standing water for reproduction.	Moderate. Some suitable habitat occurs within the Project area.
<i>Rhyacophila lineata</i> Castle Crags rhyacophilan caddisfly	Fed: None State: None	Occurs in aquatic habitats such as creeks and springs.	Moderate. Some suitable habitat occurs within the Project area.
<i>Rhyacophila mosana</i> Bilobed rhyacophilan caddisfly	Fed: None State: None	Occurs in aquatic habitats such as creeks and springs.	Moderate. Some suitable habitat occurs within the Project area.

SPECIES	STATUS	HABITAT	POTENTIAL FOR OCCURRENCE – PROJECT AREA
<i>Vespericola sierranus</i> Siskiyou hesperian	Fed: None State: None	Occurs in riparian habitats, including springs, seeps, and deep leaf-litter along streambanks, and under rocks and debris. Preferred sites are within moist ravines, valleys, gorges, and talus sites with permanent water sources.	Moderate. Some suitable habitat occurs within the Project area.
<i>Vulpes vulpes necator</i> Sierra Nevada red fox	Fed: None State: Threatened FS: Sensitive	Dense vegetation and rocky areas in forests interspersed with meadows or alpine fell-fields. Typically, alpine, alpine dwarf scrub, broadleaved upland forest, subalpine and upper montane coniferous forest, meadows, riparian scrub, and wetlands.	Low. Marginal suitable habitat occurs within the Project area.

**Absent:** Species or sign not observed on the site, outside of the known range, and conditions unsuitable for occurrence.

**Low:** Species or sign not observed on the site, but conditions marginal for occurrence.

**Moderate:** Species or sign not observed on the site, but conditions suitable for occurrence and/or an historical record exists in the vicinity.

**High:** Species or sign not observed on the site, but reasonably certain to occur on the site based on conditions, species ranges, and recent records.

#### Federal status

Endangered = listed as Endangered under the federal Endangered Species Act

Threatened = listed as Threatened under the federal Endangered Species Act

Candidate = a Candidate for listing under the federal Endangered Species Act

BCC = designated as a Bird of Conservation Concern

#### State status

Endangered = listed as Endangered under the California Endangered Species Act

Threatened = listed as Threatened under the California Endangered Species Act

SSC = designated as a Species of Special Concern

FP = designated as a Fully Protected species

WL = designated as a Watch List species

#### Other

CNDDDB = this species is only listed by the CNDDDB and may be locally sensitive or its occurrences may be monitored to see if further protection is needed

### Applicant Proposed Measures

Applicant Proposed Measures (APMs) are intended to minimize the potential for impacts resulting from construction, operation, and maintenance of the proposed Project before such impacts can occur. APMs differ from mitigation measures, which are typically proposed for the purpose of mitigating specific impacts after they occur.

Specific APMs intended to avoid or minimize the potential for Project-related impacts to biological resources are described in Table 4.5-3 below.

**TABLE 4.5-3 APPLICANT PROPOSED MEASURES**

APM #	DESCRIPTION
APM BIO-1	<p>Focused pre-construction surveys for special-status plant species shall be conducted in appropriate habitat, according to USFWS and CDFW protocols for species having a specified protocol, or according to standard, scientifically accepted systematic surveys appropriate for each species. Surveys will be conducted in areas of planned ground disturbance. To the extent feasible, avoidance modifications in the placement of transmission towers, access and spur roads, and of various marshalling and staging areas shall be made in accordance with the final Project design and needs. If special-status plant species are located during focused surveys within the Project area, avoidance measures shall be incorporated. If avoidance is not possible, relocation efforts, including topsoil salvage and relocation, if necessary, will be implemented. If PacifiCorp proposes any changes to the current construction plan or pole replacement sites after focused surveys for special-status species are conducted, additional field surveys shall be required prior to construction activities.</p> <p>Pre-construction biological clearance surveys shall be conducted to avoid or minimize potential impacts to special-status wildlife species. If burrows are located during surveys, avoidance measures shall be incorporated and the Environmental Monitor shall proceed as described in APM BIO-6.</p>
APM BIO-2	<p>Prior to first use, the under-carriages, wheels, and bodies of construction and operations equipment previously used outside of the Project area shall be thoroughly washed in maintenance yards by high pressure jets to eliminate any soil buildup that may contain invertebrates, such as insects and insect eggs, or the seeds of exotic plant species.</p>
APM BIO-3	<p>Every reasonable effort shall be made to minimize temporary and permanent removal of native vegetation at work areas. If required, native vegetation shall be flagged for avoidance. If native vegetation cannot be avoided, it will be crushed rather than bladed. A project revegetation plan shall be prepared for areas of native vegetation temporarily affected by Project construction activities.</p>
APM BIO-4	<p>Construction crews shall avoid affecting the streambeds and banks of any streams along the route, to the extent feasible. If necessary, a LSAA will be secured from the CDFW. Impacts will be mitigated based on the terms of the LSAA. No streams with flowing waters or those capable of supporting special-status species would be expected to have permanent adverse impacts from project implementation.</p>
APM BIO-5	<p>To avoid impacts from temporary access to wetland areas, existing access roads and temporary access methods (e.g., high density polyethylene driving mats, portable road platforms) shall be used to access pole replacement sites. Results of the wetland delineation (Appendix D) shall be incorporated into vehicle access routes, which shall be designed to avoid and minimize wetland disturbance.</p>
APM BIO-6	<p>Environmental Monitors shall be assigned to the Project, and will be responsible for ensuring that impacts to special-status species, native vegetation, wildlife habitat, or unique resources are avoided to the fullest extent possible. The monitor shall delineate and mark for avoidance in the field all known sensitive resource locations and, where appropriate, use flagging to delineate boundaries of areas from where activities are restricted to protect native plants and wildlife, or special-status species. If the monitor determines that project activities may adversely affect the species, the monitor shall consult with USFWS and/or CDFW regarding appropriate avoidance measures. These restricted areas shall be monitored during construction to ensure their protection.</p>
APM BIO-7	<p>PacifiCorp shall conduct all pole installation, conductor installation, tree trimming, tree removal, grading and clearing of vegetation from September 1 – February 28, outside of the nesting season. The March 1 – August 31 nesting season dates are guidelines: nesting season may begin earlier or end later</p>

APM #	DESCRIPTION
	depending on weather conditions; nests will be protected regardless of the calendar date. If construction cannot be completed outside of the nesting season, pre-construction surveys within the Project area will be conducted by a qualified biologist for nests prior to ground disturbance, tree trimming or other construction activities. The nesting bird clearance survey will be conducted within three days prior to construction activities. For passerines, a 50-foot buffer will be installed around the nest and maintained around the nest until the young have fledged. A larger buffer may be required if nesting birds appear stressed. Nesting raptors require a larger buffer area than passerines. If a raptor nest is observed, a 300-foot buffer will be installed. If a nesting raptor is observed within 300 feet of the Project area prior to the start of construction, a qualified biologist will determine whether or not construction activities could potentially disturb nesting raptors and implement appropriate measures (e.g., onsite monitor, timing restriction) to adequately protect nesting raptors.
APM BIO-8	A WEAP shall be prepared and all construction crews and contractors shall be required to participate in WEAP training prior to starting work on the Project. The WEAP training shall include a review of the special-status species and other sensitive resources that could occur in the Project area, the locations of any existing sensitive resources, their legal status and protections, and measures to be implemented for avoidance of these sensitive resources. A record of all personnel trained shall be maintained.
APM BIO-9	Migratory bird flight paths in the Project area are currently unknown. An impact assessment study and bird observation surveys shall be conducted according to APLIC's (1994) survey protocol. The surveys shall be conducted within wetlands along both sides of the existing transmission line within the study area. The surveys shall be done in consultation with CDFG. Results of the bird observation surveys will determine potentially impacted species and locations to mark wires to increase their visibility to flying birds. Line markers should be designed to be raptor-safe in accordance with the Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2012 (APLIC 2012), evaluated and approved by PacifiCorp engineers prior to implementation.
APM BIO-10	Vehicles shall be restricted to previously established roadways and access routes.
APM BIO-11	Trash, dumping, firearms, open fires, hunting, and pets shall be prohibited in the Project area.

### 4.5.3 Environmental Impacts

Ground disturbance for the Project would occur mostly in areas already disturbed by residential activity, infrastructure, or cattle grazing. The pole replacement and reconducted transmission line would follow the existing power line and would not require new permanent disturbance. Existing access roads would be used where possible during construction, and no new permanent access roads would be constructed. The proposed Project entails relatively limited amounts of disturbance in very small areas (i.e., pole sites) and on previously disturbed residences. Pole replacement in wetlands along the existing transmission line corridor would be conducted using temporary construction pads, geomats, portable road platforms, or similar methods and would result in minimal disturbance to wetlands and wetland vegetation. Minimal, temporary impacts to wetlands may occur at the on-ground installation point where vegetation is crushed by construction pads; however, this report does not identify any significant impact to organisms associated with wetlands or aquatic habitats, which includes plants and wildlife such as amphibians, reptiles, and riparian birds.

Direct impacts occur when biological resources are altered or destroyed during the course of, or because of, Project implementation. Examples of such impacts include removal of vegetation, filling wetland habitats, or severing or physically restricting the width of wildlife linkages. Other direct impacts may include loss of foraging or nesting habitat and loss (take) of individual organisms because of habitat clearing.

Indirect impacts may include elevated levels of noise or lighting, changes in surface water hydrology within a watershed, and increased erosion or sedimentation. Indirect impacts can affect vegetation communities or their potential use by sensitive animals. These impacts may affect the breeding and foraging behavior of animals both on and off the Project site. Permanent impacts may result in

irreversible damage to biological resources. Temporary impacts are interim changes in the local environment due to construction that would not extend beyond Project-associated construction.

Would the Project:

- a) **Have a substantial adverse effect, either directly or indirectly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

**Less than Significant with Mitigation Incorporation.**

#### General Impacts

Twenty-six sensitive wildlife species and 25 sensitive plant species potentially occur within the Project area, based on habitat requirements. These species are discussed in Appendix C – *Biological Habitat Assessment Report*. Potential impacts to these species and Applicant Proposed Measures (APMs) that would avoid or minimize them are discussed below.

#### Sensitive Plants

Given to lack of appropriate habitat and elevation of the Project area, only 26 of 66 reviewed sensitive plant species have potential to occur in the Project area. Most of those species have a moderate or high potential to occur due despite habitat fragmentation by human activities, and disturbance related to cattle and horse grazing resulting in habitat that is only marginally suitable throughout much of the Project area.

With implementation of APM BIO-1 (pre-construction surveys), sensitive plants located during pre-construction surveys or during construction, will be avoided to the fullest extent feasible. If avoidance is infeasible, efforts such as topsoil salvage or plant relocation will be implemented to minimize potential for impact by construction activities. Implementation of APM BIO-6 (Environmental Monitors during construction activities) would ensure areas where sensitive plants are located would be avoided during construction activities. Potential for habitat modification through removal of native vegetation, including wetland vegetation, through removal of native vegetation would be avoided or minimized through implementation of APM BIO-3 (minimize impacts to native vegetation) and APM BIO-2 (vehicle undercarriage washing) and APM BIO-10 (established roadways and access routes).

With implementation of the above APMs, impacts to sensitive plant species would be less than significant and no mitigation would be required.

#### Bats

Sensitive bat species may occur within the Project area. Two special-status species of bats have moderate potential to occur within the Project area, and one species has a low potential to occur. The spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis californicus*), and silver-haired bat (*Lasionycteris noctivagans*) may occur within the Project area during nocturnal foraging; however, as nighttime construction is not anticipated, significant impacts to these species as result of the Project are unlikely. Removal of vegetation on the Project area may reduce the numbers of some insect prey that could be used by these species; however, the quantity of prey that would be impacted is considered inconsequential. Within implementation of APM BIO-1 (pre-construction surveys), no additional mitigation would be required.

### Raptors

Four species of raptors have a potential to occur in the Project area; northern goshawk (*Accipiter gentilis*), American peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), and osprey (*Pandio haliaetus*). Raptors are likely to utilize the Project area for foraging and possibly roosting. Removal of vegetation in the Project area may reduce the numbers of some prey that could be used by these species, at least temporarily; however, the quantity of prey that would be impacted is considered inconsequential. Spacing between conductors and grounding surfaces on the 69 kV structures for this Project would be adequate to preclude electrocution potential for raptors. Replacement poles would meet the Avian Power Line Interaction Committee (APLIC) suggested practices for avian protection on power lines (APLIC 2006). With implementation of APM BIO-1 (preconstruction surveys), APM BIO-7 (avoid impacts to active nests), and APM BIO-9 (bird surveys/impact assessment and line marker placement, and avian protection), impacts to raptor species would be less than significant and no additional mitigation would be required.

### Migratory and Nesting Birds

Several special-status avian species have a potential to occur within the Project area; great blue heron (*Ardea Herodias*), western yellow-billed cuckoo (*Coccyzus americanus*), willow flycatcher (*Empidonax trallii*), and California gull (*Larus californicus*). The trees, shrubs, ruderal vegetation, and other structures in the Project area provide suitable nesting habitat for a number of common and special-status birds protected by the MBTA. As discussed above, the MBTA prohibits the killing of migratory birds. Conducting vegetation clearing and other ground disturbing activities outside of the avian nesting season (late February to early July) would minimize the potential for impacts to birds and potential violation of the MBTA.

If construction occurs during the breeding season, the construction area will be surveyed for nests prior to initiation of construction activities. Pre-construction bird observation surveys would determine if migratory bird corridors occur within the Project limits and identify active nests. With implementation of APM BIO-1 (preconstruction surveys), APM BIO-7 (avoid impacts to active nests), and APM BIO-9 (bird surveys/impact assessment and line marker placement, and avian protection), impacts to migratory and nesting bird species would be less than significant, and no additional mitigation would be required.

### Mammals

Three special-status mammals have a moderate potential to occur in the Project area: Sierra Nevada mountain beaver (*Aplodontia rufa californica*), Pacific marten (*Martes caurina*), and west coast fisher (*Pekania pennanti*). One special-status mammal species, Sierra Nevada red fox, has a low potential to occur in the Project area. Three other species (California wolverine, Oregon snowshoe hare, and gray-headed pika) known to occur in the vicinity, but are unlikely to occur in the project area, and are considered absent. With implementation of APM BIO-1 (preconstruction surveys), APM BIO-6 (Environmental Monitors during construction activities), APM BIO-6 (Worker Environmental Awareness Program), and APM BIO-11 (restrictions on vehicles, trash, firearms, and pets) impacts to special-status mammal species would be less than significant and no additional mitigation would be required.

### Reptiles

One sensitive reptile species, western pond turtle (*Emys marmorata*), may occur in riparian areas in the Project area. Reptiles such as the western pond turtle are highly susceptible to impacts from

vehicles and construction equipment activities. Vegetation and ground disturbances may crush individual turtles on the surface, among vegetation, in burrows, or sequestered beneath surface debris and rocks. Biological monitors that are experienced in handling and moving turtles that are considered to be in jeopardy would be utilized during Project construction activities. With implementation of APM BIO-1 (preconstruction surveys), APM BIO-3 (minimize impacts to native vegetation), APM BIO-4 (minimize riparian disturbance), APM BIO-6 (Environmental Monitors during construction activities), and APM BIO-10 (restriction to established roadways and access routes), impacts to sensitive reptile species would be less than significant and no additional mitigation would be required.

### Amphibians

Three sensitive amphibian species may occur in the Project area; Pacific tailed frog (*Ascaphus truei*), foothill yellow-legged frog (*Rana boylei*), and Cascades frog (*Rana cascadae*). Amphibians are highly susceptible to impacts from vehicles and construction equipment activities. Vegetation and ground disturbances may crush individuals on the surface, among vegetation, in burrows, or sequestered beneath surface debris and rocks. No practical method is available to mitigate for many of these smaller animals; however, with implementation of APM BIO-1 (preconstruction surveys), APM BIO-3 (minimize vegetation impacts), APM BIO-4 (minimize riparian disturbance), APM BIO-5 (temporary access to wetlands), APM BIO-6 (Environmental Monitor during construction activities), and APM BIO-10 (restriction to established roadways and access routes), impacts to sensitive amphibian species would be less than significant and no additional mitigation would be required.

### Invertebrates

Seven special-status invertebrate species may occur within the Project area (Suckley's cuckoo bumble bee, confusion caddisfly, leaden slug, natural bridge megomphix, Castle Crags rhyacophilan caddisfly, bilobed rhyacophilan caddisfly, and Siskiyou Hesperian). Habitat with which these species have been associated occurs within the Project area, but little else is known about their life habits. No practical method is available to mitigate for many of these species; however, with implementation of APM BIO-3 (minimize vegetation impacts), APM BIO-4 (minimize riparian disturbance), APM BIO-5 (temporary access to wetlands), APM BIO-6 (Environmental Monitor during construction activities), and APM BIO-10 (restriction to established roadways and access routes), impacts to sensitive invertebrate species would be less than significant. No mitigation would be required.

**b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

**Less than Significant Impact.** Vegetation clearing for access to pole sites and pole replacement has the potential to remove plants that may provide forage and cover for wildlife species; however, impacts associated with vegetation clearing would be minimized to the greatest extent feasible with AMP BIO-3. Removal of vegetation also increases the potential for post-construction erosion. Project APMs that address erosion protection would minimize the potential for such effects (APM BIO-4). Invasive plants may compete with native vegetation for resources, and may also change the local fire regime. Invasive plant species may not be palatable alternatives for special-status species that utilize native vegetation in the area. Implementation of APM BIO-2 (vehicle undercarriage washing), potential for construction vehicles and equipment to carry non-native vegetation into the Project area will be minimized. With further implementation of APM BIO-5 (temporary wetland access) and of APM BIO 6 (Worker

Environmental Awareness Program), impacts to vegetation would be less than significant. No additional mitigation would be required.

**c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

**Less than Significant.** Permanent impacts to wetlands would consist of placing fill, in the form of new poles and backfill materials, in wetlands or areas that are deemed wetland mitigation areas. The new poles would be 19 inches in diameter with a permanent footprint of 1.77 square feet per pole, once installed. North of the existing Mt. Shasta Substation, 14 poles would be replaced in wetlands, including 8 poles that would be replaced in the wetland mitigation area (Morgan-Merrill Wildlife Preserve, as discussed in Section 4.5.2). Installation of these 14 poles would result in permanent impacts of 28.58 square feet (0.0007 acre) in wetland areas.

Temporary impacts would result from ground disturbance for temporary access to pole sites and disturbance of wetlands during construction activities, including removal of the distribution line adjacent to Cold Creek in the Morgan-Merrill Wildlife Preserve, resulting in a temporary disturbance area of 1.978 acres (86,165.6 square feet) to wetlands. Construction vehicles and equipment could create ruts, or compress soils. Removal of wetland vegetation could alter wetland ecosystems and result in localized erosion, and filling of waters or wetlands downgradient through sedimentation.

Given the nature of the proposed Project and the location of the ROW, impacts resulting from pole placement cannot be avoided; however, with implementation of APM BIO-5 (temporary wetland access), APM BIO-3 (minimize vegetation impacts), and APM BIO-10 (restriction to established roadways and access routes) impacts to these wetlands, and to the swale near Pole 23/48 would be minimized. Access through wetlands and to pole work areas would be conducted using geomats, portable road platforms, or similar methods to minimize the potential for creating ruts or causing soils compression. To the greatest extent feasible, wetland vegetation would be crushed rather than bladed (APM BIO-3). Cold Creek and its associated riparian habitat, banks, and streambed would be avoided by the Project to the maximum extent feasible; access roads would be designed to avoid crossing or otherwise affecting this riparian area to the maximum extent feasible, in compliance with APM BIO-4 (avoidance of streambeds and banks). Should proposed Project circumstances make avoidance infeasible, PacifiCorp would consult with the CDFW and, if required, obtain a Lake or Streambed Alteration Agreement in compliance with Section 1602 CDFG. With implementation of APM BIO 6 (Environmental Monitors during construction), and APM BIO-8 (WEAP), impacts to wetlands would be less than significant and no additional mitigation would be required.

**d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**Less than Significant.** The majority of the proposed Project would be located within open space areas, allowing free movement of wildlife species. Due to the relatively small size of the structures, the large spans between structures, and the open landscape, the Project as proposed would not interfere substantially with the movement of any wildlife species. During construction, temporary construction-related noise may have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Wildlife species stressed by noise may temporarily disperse from habitat in the vicinity of the proposed Project, but would be anticipated

to return to baseline levels once construction is completed. Impacts would be less than significant, and no mitigation would be required.

e) **Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?**

**No Impact.** Construction and operation of the proposed Project would not conflict with any local policies or ordinances protecting biological resources; therefore, there would be no impact and no mitigation would be required.

f) **Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

**Less than Significant.** The Proposed Lassen Substation would not be located within the boundaries of an adopted a HCP, NCCP, or other approved local, regional, or state habitat conservation plan for the Project area or its vicinity.

A portion of the transmission line upgrade, beginning midway between pole 12/48 and 13/48 and continuing north to Hatchery Lane, consists of natural and created wetlands, and non-wetland natural areas that were set aside as wetland mitigation (Theiss 1990). In 2000, this property was declared the Morgan-Merrill Wildlife Preserve (County of Siskiyou 2000) as part of that mitigation plan. The purpose of the wildlife preserve is to ensure that the protected area would be retained in its natural wetland and open space condition in perpetuity.

The Project is consistent with State and local applicable standards and guidelines. Additionally, implementation of Project APM's would ensure Project related construction and operation impacts would be less than significant. Moreover, PacifiCorp would conduct all activities associated with the construction and operation of the substation and transmission/distribution line within the authorized limits of the ROW and in strict conformity with measures identified to reduce potential impacts of the Project. Replacement of the poles and reconductoring along the distribution lines would occur within PacifiCorp's existing ROW and easements.

PacifiCorp design standards require a ROW that is 50 feet wide for a 115 kV transmission line. The existing ROW for the 69 kV transmission line varies from 50 feet to 75 feet wide; therefore, the new 115 kV line into the proposed substation would not require new easements for the pole upgrade portion of the Project. Therefore, the proposed Project would not conflict with the Morgan-Merrill Wildlife Preserve and impacts would be less than significant.

## 4.6 Cultural Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Disturb any human remains, including those interred outside of formal cemeteries?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.6.1 Methodology

POWER Engineers, Inc. (POWER) prepared a CEQA-level *Cultural Resources Technical Report* (provided in Appendix C of this PEA) in support of this document. The methods used to identify cultural resources in that study included a background literature review conducted at the Northeast California Information Center (NEIC), which is located at the California State University, Chico. The records search was conducted by NEIC staff in 2009 and 2011, with an updated review conducted in late 2014 and July 2015. POWER also consulted with the Native American Heritage Commission (NAHC) and local Native American tribal organizations as a part of the cultural resource analysis. NEIC staff examined the following data sources during the records searches:

- National Register of Historic Places
- California Historical Landmarks
- California Register of Historical Resources
- California Points of Historical Interest
- Historic Property Data File Directory for Siskiyou County
- Historic Spots in California
- Determination of Eligibility Index Reports

Historic aerial photographs, topographic maps and the BLM General Land Office (GLO) database, which can be utilized from various online sources, were also reviewed by POWER staff in December 2014.

The location of the proposed substation was surveyed by POWER on July 29, 2011. On Sept 14, 2011, POWER conducted a survey, where possible, of acreage contained within a 75-foot radius (7,850 square feet, 0.2 acre) surrounding each pole location for the Project. The transect survey was conducted by walking parallel transects spaced no more than 33 feet (10 meters) apart within the 75-foot radius of the survey area around the existing power poles. All pole locations were visited; however, ground surface visibility was limited by tall brush and muddy wetland soils at nine pole

locations. An additional survey for the distribution lines was conducted by POWER in June 2015. No excavation was conducted during these surveys.

### **Native American Coordination**

POWER initially contacted the California Native American Heritage Commission (NAHC) requesting a Sacred Lands File Search and a list of Native American groups that might have historic ties to, and interest in, the Project area on October 17, 2011. In a letter dated October 27, 2011 the NAHC stated that their files indicated that there were no known Native American cultural resources identified within the immediate Project vicinity. At that time the NAHC also provided a list of six Native American contacts to be informed of the Project. On October 28, 2011, POWER sent letters to the contacts providing information about the project. Tribal concerns were expected and letters were sent to the following contacts:

- Mr. Harold Bennett, Chairperson, Quartz Valley Indian Community
- Ms. Yvette Lewis, Cultural Resources Coordinator, Quartz Valley Indian Community
- Ms. Rebekah Sluss, Environmental Coordinator, Quartz Valley Indian Community
- Ms. Athena Calico, Vice Chairperson, Shasta Indian Nation
- Ms. Mary Carpelan, Cultural and Archaeological Resources, Shasta Nation
- Mr. Roy Hall, Jr., Chairperson, Shasta Nation

POWER again contacted the NAHC in a letter dated November 14, 2014 and requested an updated Sacred Lands File Search and list of Native American groups that might have historic ties to, and interest in, the proposed Project area. The NAHC responded in a letter dated November 26, 2014 that there were no known Native American cultural resources identified within the immediate Project vicinity. The NAHC also identified six Native American contacts to be informed of the Project. POWER sent letters providing information about the Project to these contacts on December 8 and 9, 2014. Letters were sent to the following contacts:

- Mr. Aaron Peters, Chairperson, Quartz Valley Indian Community
- Ms. Evette Lewis, Cultural Resources Coordinator, Quartz Valley Indian Community
- Ms. Rebekah Sluss, Environmental Coordinator, Quartz Valley Indian Community
- Ms. Mary Carpelan, Cultural and Archaeological Resources, Shasta Nation
- Mr. Roy V. Hall, Jr., Chairperson, Shasta Nation
- Ms. Sami Jo Difuntorum, Cultural Resources, Shasta Indian Nation and Administrator, Butte Valley Indian Community

As of the date of this report, responses from the above listed Native American contacts have not been received by POWER. Copies of these letters are provided in Appendix C of the *Cultural Resources Technical Report*, along with a tracker that concisely summarizes these data.

### **Paleontology**

POWER staff reviewed background geological literature associated with the southwest section of the City of Mt. Shasta and this portion of Siskiyou County during the preparation of this Cultural Resources Section. This included works by Miller (1980), Sigurdsson (2001), and discussions of local geology by Hirt (2001).

## 4.6.2 Environmental Setting

### Prehistory

This section describes human occupation in a chronological order in the Project area. The Project area is situated within a portion of the Shasta Valley that was occupied by different cultures from the “Early Horizon” to the proto-historic period, and is within the ethnohistoric territory of the Shastan people.

#### Early Horizon (9000 B.C. to 2000 B.C.)

Evidence of early Post-Pleistocene occupation of this region, including what has been called the Early Horizon, is generally lacking in the area bordering Shasta Valley. Wallace (1978) breaks this part of the cultural sequence into three periods based on evidence of the shift in the general subsistence pattern of each area of California between 9000 and 2000 B.C.

Period I: Beginning in 9000 B.C., the first period is dominated by a hunting strategy, with groups moving frequently to follow the seasonal migrations of large game. Evidence of this is exhibited in light refuse deposits, and lacking evidence of dwellings and ground stone tool technology. This period persists in most parts of California until around 6000 B.C.

Period II: Period II begins around 6000 B.C. with a shift in the general subsistence strategy to include wild plant food collection as a significant part of the diet. The importance of wild plant foods during this period is evident in the increasing numbers of grinding implements, especially mealing slabs and mullers, found at sites dating between 6000 and 3000 B.C. (Wallace 1978).

Period III: According to Wallace (1978), broad changes became evident in the prehistoric subsistence pattern again after 3000 B.C., with adaptation to the region’s natural environment leading to wider exploitation of available food resources and greater subsistence efficiency. In the Sacramento Valley area and at the foothills of the Sierra Nevada Mountains, this shift is characterized by the “Windmillers” people, who inhabited these areas between 3000 and 2000 B.C.

#### Middle Horizon (2000 B.C. to 800 A.D.)

The Middle Horizon, or the Transitional Horizon as discussed by Heizer (1941), is characterized by the development of regional prehistoric cultural traditions sometime around 2000 B.C. (Elsasser 1978). Although the tradition appears slightly later, Middle Horizon sites in the southern Cascades follow a similar pattern to those in the Redding area, following the shift to increased diversification in the subsistence pattern of the time. In the Upper Pit River area, sites characteristically have a large amount of marine shell jewelry, exhibit a shift to smaller stemmed and serrated point styles and sometimes contain Desert Side Notched varieties, and appear to revert back to the practice of flexed position inhumations (Elsasser 1978).

#### Late Horizon (1000 B.C. to A.D. 1000)

This cultural horizon includes the period of time just before and continuing after contact with European settlers. Based on current evidence of proto-historic patterns, it is suggested that cultures were entrenched in local traditions by at least A.D. 1000 and possibly as early as A.D. 500 (Elsasser 1978; King 1978). The Late Horizon represents a continuation of the previous traditions occurring prior to European contact and continuing as late as the mid-nineteenth century.

## **Ethnography**

After the Spanish began colonizing coastal California in 1769, Native American groups were subject to dramatic social and cultural changes, including the establishment of the Spanish mission system and the introduction of new diseases that decimated native populations. Population declined even further during smallpox epidemics in 1863 and 1870. The Project is situated within the traditional boundary of the Shastan tribe (Moratto 2004; Kroeber 1925). The following briefly discusses this ethnographic group.

The Project area was occupied by the Shastan people, composed of four groups: Shasta, Konomihu, Okwanuchu, and New River Shasta (Heizer 1978). Not much is known about the Konomihu, Okwanuchu, and New River Shasta.

The Shasta occupied land from around Jacksonville, Oregon, in a swath of land that roughly followed the southern upper Rogue River watershed southeast towards Beswick, California, encompassing parts of the upper Klamath River watershed, including Jenny Creek. This territory then widened westward toward Seiad Valley along the Klamath River watershed, then the limit headed south to the Salmon Mountains and to Callahan, California. The territorial limit then progressed eastward to Mt. Shasta and back north to Beswick. The Okwanuchu occupied portions of the upper Sacramento and McCloud watersheds south of Mt. Shasta and including the southeastern corner of the Shasta territory described above. The New River Shasta and Konomihu lived in an area surrounding Cecilville, 40 miles to the southwest of the Shasta area described above, and surrounding the north, east, and south forks of the Salmon River as well as the upper New River watershed (Heizer 1978).

## **History**

**Siskiyou County.** Spanish and Mexican expeditions and early fur trapping ventures had brief stays in the general Project vicinity. Expeditions, such as that of Jedediah Smith in 1828, were conducted for exploration and trapping in the 1820s. Hudson's Bay Company and American trappers encountered the inland Indian tribes between the mid-1820s and 1840 (Wells 1881). Later, government-sponsored surveys and expeditions were conducted in the area; Colonel John C. Fremont was one of the best-known explorers (Lamson 1984). Mt. Shasta was a landmark on the Siskiyou Trail, which runs along the base of the mountain, in the 1820s. The Siskiyou Trail began as an ancient trade route between California's Central Valley and the Pacific Northwest. In 1841, the United States Exploring Expedition, a group of scientists and cartographers to first visit the region, used the Siskiyou Trail. Gold was discovered in the area during the 1850s along the local rivers.

The gold rush was the impetus for growth of the City and surrounding area (City of Mt. Shasta 1992). The transportation routes opened the sparsely populated area to gold seekers traveling the Siskiyou or California to Oregon Trail, through Shasta Valley. One early pioneer, Lindsey Applegate, stopped in a small valley known as "Wagon Valley" in 1849. At this location, the trail was described as being rough; Ross McCloud improved the trail in 1856, and it later became a wagon road. The route eventually became the Shasta to Yreka stagecoach route, and now the Old Stage Road roughly follows the early route (SCSC 2002).

Soon after the Old Stage Road was completed, railroads were extended into the area to service the lumber mills that had developed around the region, including in the City of Mt. Shasta. The Southern Pacific Railroad was developed and preceded adjacent to the present Project area along with the McCloud River Railroad. Along with gold mining and lumber businesses, many residents invested in farms to pursue other economic goals such as ranching, homesteading, and recreational activities (SCSC 2002).

## Paleontological

The area is dominated by Mt. Shasta, stratovolcano that is believed to have begun erupting approximately 600,000 years ago (Sigurdsson 2001). Between 300,000 and 360,000 years ago the north side of the volcano collapsed, creating an enormous landslide or debris avalanche (Olsen 1980). The slide flowed northwestward into Shasta Valley, where the Shasta River now cuts through the flow. With each eruption, debris, lava and pyroclastic flows fell across the surrounding area and other cones on the volcano have risen since that time, creating the complex volcano we see today.

According to Hirt (2001) in the last 8,000 years, the Hotlum Cone has erupted at least eight or nine times. In approximately 1786, the last significant Mt. Shasta eruption came from this cone and created a pyroclastic flow, a hot lahar (mudflow), and three cold lahars, which streamed 7.5 miles down Mt. Shasta's east flank via Ash Creek. A separate hot lahar travelled 12 miles down Mud Creek.

These facts suggest that all land in and near the major valleys around Mt. Shasta have been heavily impacted by volcanic flows and debris scatters during the Holocene period. Because it is highly unlikely that fossils will be encountered within Holocene Period deposits, the potential for uncovering fossil deposits during construction is considered quite low.

## Regulatory Framework

Background research taken place by POWER (2014) mandated a need to determine if any cultural resources listed on the NRHP are located on or near the Project area. Because NRHP-listed resources are automatically placed on the California Register of Historical Resources (CRHR), and because NRHP and CRHR-listed resources must be identified during studies that help to fulfill the requirements of CEQA, a short discussion of the federal regulatory requirements and State regulatory requirements is needed herein. In addition, the CPUC serves as the Lead Agency for this Project and may be required to undertake consultation with the State Historic Preservation Office (SHPO) under certain conditions and/or if NRHP or CRHR-eligible cultural resources are shown to be adversely affected by the Project.

**National Historic Preservation Act (NHPA).** The National Historic Preservation Act of 1966 (as amended) is a national policy of historic preservation designed to protect, rehabilitate, restore, and reuse districts, sites, buildings, structures, and objects significant in American architecture, history, archaeology, and the Traditional indigenous culture of Native Americans. The NHPA established the NRHP, SHPOs and programs, and the Advisory Council on Historic Preservation as key elements of this pre-eminent federal historic preservation law. Regulations developed to implement the NHPA were written shortly after the NHPA was enacted, and are known as 36 CFR Part 800. Section 106 of 36 CFR Part 800 requires that federal agencies fulfill the spirit of the Act by requiring that "historic properties" be accounted for when the agency undertakes any activity (an *undertaking*) that might impact such resources, and, consult with other federal agencies and stakeholders whenever historic properties could be affected by the undertaking.

The Section 106 review process requires consultations of various kinds to help mitigate for potential impacts to "historic properties", a term which is defined by 36 CFR Part 800.16[1]. Historic properties are places that are, or potentially qualify for, listing on the NRHP. The evaluation of cultural resources for eligibility consists of determining whether it is significant (i.e., whether it meets one or more of the criteria for listing in the NRHP) and significance findings must be established by professionally qualified specialists, and concurred with by federal agencies. The NRHP eligibility criteria are defined in 36 CFR Part 60.4, and are as follows:

“...The quality of significance in America history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association:

- A. That is associated with events that have made a significant contribution to the broad patterns of our history;
- B. That is associated with the lives of persons significant in our past;
- C. That embodies the distinctive characteristics of a type, period or method of construction, or that represents the work of a master, or possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; and/or
- D. That has yielded, or may be likely to yield, information important to prehistory or history.”

**The California Environmental Quality Act.** The construction and operation of the proposed Project constitutes a project as defined by CEQA (California Public Resources Code [PRC] §§21000 et seq.). Under CEQA guidelines, a project is considered to have a significant effect on the environment if it causes a substantial adverse change in the significance of a historical resource or unique archaeological resource. Furthermore, it is recommended by CEQA that historical resources or unique archaeological resources be preserved whenever possible through avoidance of the resource. Whenever a historical resource or a unique archaeological resource cannot be avoided by project activities, the substantial adverse change shall be addressed and mitigated for as outlined in PRC 15126.4 and 15331 of CEQA.

Following PRC § 5020.1(j), an “historical resource” includes, but is not limited to, any object, building, site, area, place, record, or manuscript that is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. CEQA mandates that lead agencies consider a resource “historically significant” if it meets the criteria for listing in the CRHR (PRC § 5024.1(c)). Similar to NRHP regulations noted above, such resources meet this requirement if they:

- 1) are associated with events that have made a significant contribution to the broad patterns of California history;
- 2) are associated with the lives of important persons in the past;
- 3) embody distinctive characteristics of a type, period, region, or method of construction; and/or
- 4) represent the work of an important creative individual or possesses high artistic value.

**California Public Utility Commission (CPUC) Historic Preservation Requirements.** As the Lead Agency under CEQA guidelines, the CPUC requires that impacts to historic properties and historical resources must be defined and accounted for. At the federal level, the federal Section 106 process may apply if a requirement for an USACE Section 404 permit for river and stream crossings or other waterways under the Corps’ jurisdiction is identified during the CPUC’s scoping process. Federal regulations associated with impacts to historic properties must be fulfilled only if an USACE nexus is identified during project planning.

Under CEQA guidelines, the CPUC must identify historical resources that could be substantially and adversely changed as a result of the implementation of a Project. A substantial adverse change to the significance of a historical resource constitutes a significant effect on the environment. Substantial adverse change means “demolition, destruction, relocation, or alteration such that the significance of a historical resource would be impaired” (CEQA Section 15064.5). All properties on the California Register that may be affected by development or zoning actions must be considered under CEQA.

The fact that a resource or property is not listed on the California Register does not preclude it from being significant and does not make it exempt from CEQA evaluation. Examples may include locally designated properties and properties evaluated as significant in cultural resource surveys that meet CRHR criteria and California Office of Historic Preservation standards, as well as previously unidentified resources that are detected during surveys that take place during the planning period.

Native American sites and areas of cultural sensitivity or sacred value may also be found to be significant in spite of not being listed on the NRHP or CRHR or which do not have perceived value to the community as a whole. Many Native American sites are not listed on any Register and under State law, and many such sites are known only to local tribes.

**Impacts to Native American Human Remains.** Other State requirements associated with cultural resources appear in PRC Section 5097.5 (Archaeological, Paleontological, and Historical Sites), and Section 5097.9 (Native American Historical, Cultural, and Sacred Sites) for lands owned by the State or a State agency.

California Code of Regulations (CCR) Section 15064.4 requires that when an initial study identifies the existence or probable likelihood of Native American human remains within a project, a lead agency would work with the appropriate Native Americans as identified by the NAHC to avoid such remains. Because many such sites are not known to cultural resource specialists, consultation with tribes that may have knowledge of such resources is crucial.

The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and PRC Sections 5097.94 and 5097.98, and falls within the jurisdiction of the NAHC. If human remains are discovered, the County Coroner must be notified within 48 hours and there should be no further disturbance to the site where the remains were found. If the remains are determined by the Coroner to be Native American, the Coroner is responsible for contacting the NAHC within 24 hours. The NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased Native American so they can inspect the burial site and make recommendations for treatment, analysis, or reburial.

### 4.6.3 Environmental Impacts

A project is considered to have a significant effect on the environment if it causes a substantial adverse change in the significance of a historical resource. *Substantial adverse change in the significance of a historical resource* means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the resource would be materially impaired or diminished. Furthermore, it is recommended by CEQA that cultural resources be preserved *in situ* whenever possible through avoidance of the resource. Whenever a historical resource or unique archaeological resource (PRC 21083.2) cannot be avoided by project activities, effects must be addressed and mitigated as outlined in CEQA Guidelines 15126.4.

It is anticipated that potential impacts of the Project on historical and archaeological resources would be related to either physical damage (e.g., ground disturbance at an archaeological site caused by existing pole removal, trenching, and some surface activities) or changes in the visual setting (e.g., a transmission/distribution line disrupting the view of a visually sensitive NRHP/CRHR-eligible historic building). A change in visual setting would rarely be an issue for archaeological resources, but could be significant for some architectural resources and some sites of concern to Native Americans.

Would the Project:

**a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?**

**No Impact.** A field survey of the proposed Lassen Substation location was conducted on July 29, 2011 by POWER. The linear survey of the pole replacement locations was conducted on Sept 14, 2011 by POWER. All 36 existing power poles are located in previously developed areas and had been previously graded or cleared during initial pole ground disturbing activity. Four existing access roads were also surveyed. Visibility in the ROW ranged from 25 to 75 percent. Two historic-era resources were identified during the surveys. The first is a residence located within the Project area at 504 S. Old Stage Road (Site #JM-H-1). The second is an isolated remnant of a riveted steel water pipe that was probably manufactured during the historic period (#JM-ISO-1). The isolate was found between Pole #1/48 and Pole #2/48. An additional survey for the distribution lines that extend into the City of Mt. Shasta was conducted by POWER in June 2015.

The residence was analyzed for significance and listing on the NRHP and the CRHR by a qualified Architectural Historian, Kathleen Crawford, M.A. The residence was constructed in 1960 and was found to be ineligible for both the NRHP and the CRHR by Ms. Crawford. An isolated historical-period artifact was located during the survey, however, isolated finds whatever their age are not considered eligible for listing on the NRHP or the CRHR. These resources were determined not to qualify as historic resources, therefore, the Project would not result in the potential to damage a historic resource and no mitigation would be required.

Based on the historic background research, there is some potential that subsurface historic-era resources could be uncovered during construction; however, the Project area has been previously disturbed during development of homes and because the new poles would be placed at or very near to the existing pole locations, it is unlikely that buried historic-era resources would be uncovered during construction. Therefore, it is not anticipated that the Project would result in substantial adverse impact to subsurface historic-era resources.

**b) Cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5?**

**No Impact.** Background research did not identify previously documented archaeological resources within the proposed substation area or along the transmission and distribution line. Based on the background research, there is some potential that subsurface archaeological resources could be uncovered during construction. However, due to the fact that the parcels have been previously disturbed during development of homes and because the new poles would be placed at or very near to the existing pole locations, it unlikely that buried archaeological resources would be uncovered during construction. Therefore, no impacts to archaeological resources would occur.

**c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?**

**No Impact.** The region is dominated by the Mt. Shasta volcano, which has erupted repeatedly during the Holocene Period. Research has shown that it is extremely unlikely that paleontological resources will be encountered during construction. Therefore, the proposed Project would not directly or indirectly destroy a unique paleontological resource or site or unique geological feature and no impact would occur.

**d) Disturb any human remains, including those interred outside of formal cemeteries?**

**No Impact.** Background research did not identify previously documented resources containing human remains, nor was surface evidence identified during the reconnaissance surveys. No recorded graves or graveyards are known within one mile of the Project site. Consultation with the NAHC and local Native American tribal organizations were negative in that these groups did not report that any human burial locations are known for this area. Because of this it is unlikely that human remains would be impacted by the proposed Project. However, there is a potential to discover human remains, either historic or prehistoric. Should human remains be discovered, Project implementation would be subject to the regulations of the California Health and Safety Code Section 7050.5, PRC Section 5097.98; therefore no impact would occur.

## 4.7 Geology and Soils

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
ii) Strong seismic ground shaking?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
iii) Seismic-related ground failure, including liquefaction?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
iv) Landslides?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Result in substantial soil erosion or the loss of topsoil?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.7.1 Methodology

Existing conditions, potential geologic hazards, groundwater levels and potential mineral resources were evaluated from review of available published literature, such as geologic reports and geologic maps, soil survey data and maps, review of large-scale topographic maps, and review of orthophoto quadrangles that include the Project area. Descriptions of geologic units in the Project area were derived from published mapping by Wagner and Saucedo (1987) and Crandell (1989). Soil descriptions were obtained from mapping by the U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Siskiyou County – Central Part (Newlun 1983).

Professional Service Industries, Inc. (PSI) prepared the *Preliminary Geotechnical Engineering Report* (provided in Appendix E of this PEA) to evaluate subsurface conditions that may affect construction, operation, and maintenance of Project facilities.

## 4.7.2 Environmental Setting

### General

The Project is located along the western boundary of the Cascade Range geomorphic province of California. The Cascade Range extends from south of Mt. Lassen in Shasta County, northward through the Project area, continuing north into Oregon, Washington state and southern British Columbia. The Cascade Range consists of a north to west-northwest-trending mountain chain dominated by regularly spaced, large volcanic eruptive centers. In northern California and in the vicinity of the Project area, the Cascade Range is bounded on the west by the Klamath Mountains geomorphic province and on the east by the Modoc Plateau geomorphic province. The division between the Cascade Ranges and the Modoc Plateau is indistinct, since the characteristic volcanism associated with each province occurs locally in the other. On the west side of the Cascade province, it is likely that rocks of the Cascade Ranges lap onto or overlie Klamath Mountain province rocks (Wagner and Saucedo 1987).

### Geology

Bedrock geology of the area was completed by Wagner and Saucedo (1987) at a large scale. A summary discussion of the geology of the Cascade Range province is provided by Macdonald (1966) and Harden (1998). Only one geologic unit, *Quaternary alluvium and marine deposits*, is shown in the Project vicinity. The *Quaternary alluvium and marine deposits* are subdivided into terrace and non-glacial lake deposits. This geologic unit is further described as non-marine alluvium, lake, playa, and terrace deposits, unconsolidated and semi-consolidated (USGS 2010). Wagner and Saucedo (1987) identify the rocks as Quaternary in age.

Volcanic eruptions from Mt. Shasta have the potential to affect the Project area. Hazard zones have been described by Crandell (1988) and Hoblitt et al. (1987). The last eruption of Mt. Shasta resulted in a blanket of ash being deposited in an area within about 15 miles of the volcano. The Project would be located approximately three miles from the base of Mt. Shasta.

### Soils

There are three soil series located on the proposed substation site and in the immediate Project vicinity, as shown in Table 4.7-1. Because the parent material of these soils is alluvial in nature (derived from igneous, sedimentary, and metamorphic rock), the soils have a high sand content. Near-surface groundwater is reported for one of the soil units.

### Seismicity

There are no Alquist-Priolo special study zones within the Project area. The closest special study zones are located in the eastern part of Siskiyou County and to the southeast in Shasta County (Bryant and Hart 2007), more than 50 miles away. No known active faults are mapped closer than the Alquist-Priolo Special Study Zones (Jennings 1994).

The Project area is in Seismic Zone 3 relative to seismic design (Uniform Building Code [UBC] 1997). For the Project area, peak ground acceleration (PGA) of 0.1 to 0.2 g has a 10 percent probability of being exceeded in a 50-year period (Cao et al. 2003). Topozada et al. (2000) do not show any Magnitude 5 earthquakes in the vicinity of the Project for the period 1800 to 1999. A review of earthquake records in the Northern California Earthquake Data Center (2010) indicates similar results for the period 1900 to present. Strong ground shaking affecting the region is attributable to distant, rather than nearby, sources (e.g., active faults in eastern Siskiyou County, active faults in the Coastal California region, and the Cascadia Subduction Zone).

**TABLE 4.7-1 SOIL UNITS WITHIN PROJECT AREA**

SOIL UNIT	LANDFORM	SLOPE GRADIENT	PARENT MATERIAL	EXPANSION INDEX	EROSION HAZARD	SUITABILITY FOR ROADS	DRAINAGE CLASS	HYDROLOGIC GROUP
Diyou Loam, Peat Substratum	Floodplains	0-2%	Alluvium derived from igneous, metamorphic, and sedimentary rock	Low to Moderate	Slight	Moderately suited	Somewhat poorly drained	C
Odas Sandy Loam	Floodplains	0-2%	Alluvium derived from igneous rock.	Low to Moderate	Slight	Well suited	Poorly drained	D
Ponto-Neer Complex	Hills and toeslopes	2-15%	Volcanic ash derived from volcanic rock	None to Low	Slight	Moderately suited	Well drained	B

Hydrologic Group Ratings

- B – Soils having a moderate infiltration rate when wet. These consist chiefly of moderately deep or deep, moderately well-drained or well-drained soils that have moderately fine texture to moderately coarse texture. These soils have a slow rate of water transmission.
- C – Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.
- D – Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very low rate of water transmission.

## Regulatory Framework

The only pertinent regulation for geology is related to earthquake fault zones. California enacted the Alquist-Priolo Special Studies Zones Act in 1972, which requires the establishment of “earthquake fault zones” (formerly known as “special studies zones”) along known active faults in California (Bryant and Hart 2007). Development in these special studies zones is through enforcement of the regulations to reduce the potential for damage from fault displacement.

### 4.7.3 Environmental Impacts

Significance criteria were developed from the CEQA Guidelines (Appendix G). Impacts from the proposed Project would be considered significant if they resulted in increased exposure of people or structures to major geologic hazards that results in substantial adverse effects, or if they substantially affected important mineral resources by precluding them from extraction. However, geologic and mineral resource impacts are typically considered less than significant if, through engineering, geotechnical investigation, siting, and construction techniques, the risk of damage to structures or resources can be greatly reduced, although not eliminated completely.

The proposed Project may be impacted by geologic hazards and geotechnical conditions that exist in the Project area. These hazards may impact the Project during the life of the Project or may have impacts during a specific phase or phases (i.e., during construction, during operation, or during maintenance). However, where potentially significant impacts are a possibility, specific mitigation measures would be applied to reduce those potential impacts to less than significant. The impacts and mitigation measures are described in the following sections.

Potential geologic hazards and geotechnical conditions primarily related to excavation and grading activities during construction and maintenance include:

- Soft or loose soils
- Slope instability including landslides
- Soil erosion
- Expansive soils

Potential geologic hazards and geotechnical conditions related to operation and maintenance of the proposed Project include the following:

- Ground shaking
- Surface rupture from faulting
- Liquefaction
- Lateral spreading
- Volcanic eruption

Would the Project:

- a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**
  - i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

**Less than Significant Impact.** There are no Alquist-Priolo special study zones within the Project area. The closest special study zones are located in the eastern part of Siskiyou County and to the southeast in Shasta County, over 50 miles away (Bryant and Hart 2007). No known, historically active faults are mapped nearby (Jennings 1994), and potential impacts related to surface rupture would be similar to existing conditions. Results of the geotechnical survey revealed that peak ground acceleration of the proposed Project site is 0.293, based on utilization of the 0.2-second spectral acceleration employing a two percent probability of exceedance in 50 years (Earthquake Hazard Method). With a peak ground acceleration of 0.293, the proposed Lassen Substation would receive a seismic qualification requirement of “moderate” (PSI 2011).

The Institute of Electrical and Electronics Engineers (IEEE) Standard 693-2005, Recommended Practice for Seismic Design of Substations, ensures electrical substation equipment shall be designed so that there would be neither damage nor loss of function during and after the seismic event. In addition, equipment shall maintain the correct operational state during the seismic event, with five percent damping (IEEE 2006). PacifiCorp standards require substations to be designed and equipped according to qualification requirements described in IEEE Standard 693-2005. The proposed Project would be designed and equipped using these standards, and potential impacts related to the rupture of a known earthquake fault would be less than significant, and no mitigation would be required.

ii. Strong seismic ground shaking?

**Less than Significant Impact.** Because the Project is located in Seismic Zone 3 (UBC 1997), it is anticipated that the Project could be affected by strong seismic ground shaking. A peak ground acceleration of 0.1 to 0.2 g has a 10 percent chance of being exceeded in a 50-year period (Cao et al. 2003).

Facilities at the substation could be affected by strong ground shaking. Foundations and structures would be constructed in accordance with IEEE Standard 693-2005 and other relevant current building codes. It is expected that potential significant impacts can be mitigated through site-specific design information as needed and development of proper plans and construction. Certain equipment at the substation would be more susceptible to seismic shaking. The IEEE Standard 693-2005 provides recommendations for mitigating possible damage to substation equipment. Because PacifiCorp standards require substations to be designed and equipped according to qualification requirements described in IEEE Standard 693-2005, it is anticipated that little structural damage would occur from horizontal ground accelerations. Design-level geotechnical studies would be performed as necessary to evaluate the potential for, and effects of, strong ground shaking, and the facilities would be designed and constructed in accordance with current code. As a result, potential impacts from strong ground shaking would be less than significant; therefore, no mitigation would be required.

iii. Seismic-related ground failure, including liquefaction?

**Less than Significant Impact.** There are no Alquist-Priolo special study zones within the Project area. The closest special study zones are located in the eastern part of Siskiyou County and to the southeast in Shasta County, over 50 miles away (Bryant and Hart 2007). No known active faults are mapped nearby (Jennings 1994). No impacts from surface rupture are expected or likely.

Liquefaction can occur in wet, loose sandy soils or soft silt soils subjected to seismic shaking. Saturated, loose sand, soft silt, and soft clay soils are present along the transmission line and distribution lines in the vicinity of the proposed substation. Near-surface soils range from

poorly drained to moderately well drained; construction would be planned for the dry months when surface- or near-surface water would likely be at the lowest levels. Design-level geotechnical studies would be performed as necessary to better define soils that have the potential to liquefy during an earthquake to ensure substation design and installations are up to current seismic building codes.

Soil on the substation site comprises sandy silt underlain by silty sand with gravel, cobble, and boulders; in addition, geotechnical surveys revealed saturated soil and near-surface groundwater. These conditions are indicative of soils that have potential for seismic-related ground failure, such as liquefaction. Areas subject to liquefaction can also undergo subsidence. Liquefaction-induced lateral spreading usually occurs on mile slopes of 0.3 percent to five percent where wet, soft silt, soft clay, or loose sandy soils are present in proximity to a free face (Rauch 1997). The potential for lateral spreading appears to be high.

Project design would include excavation of soft or loose, wet soils and replacement with imported structural fill materials, such as well-graded sand and gravel materials that meet the grading specifications set forth by the Geotechnical Engineer (refer to Appendix E, *Preliminary Geotechnical Engineering Report*). Structural fill materials would be conditioned and compacted as specified by the Geotechnical Engineer. Substation foundations would be designed and constructed in accordance with appropriate IEEE, American Society for Civil Engineers (ASCE), and American Concrete Institute (ACI) standards. In addition, it is anticipated that the proposed structures could experience some settlement that could occur as the result of liquefaction; however, implementation of project design specification as set forth in the Preliminary Geotechnical Engineering Report.

Additional geotechnical investigation would be performed relative to liquefaction hazards within the Project boundary prior to final design plans and construction. Therefore, impacts as a resulting from seismic-related ground failure would be less than significant.

iv. Landslides?

**Less than Significant Impact.** The Project site is located on ground with an average slope of five percent and is not susceptible to landsliding; however, short segments of sloped areas where landslides could potentially occur are present near the northern end of the Project. Construction of new roads or regrading of existing roads could impact slope stability. As with natural slopes, as the slope inclination increases, the potential for landsliding increases. Placing fill on slopes, either for the construction of roads or for pulling and tensioning sites, can also increase the potential for landsliding. Improper drainage can saturate near-surface soils and help cause unstable soil conditions. As the inclination of slopes increases, the potential for landsliding becomes greater. The primary potential for landsliding is from construction of new roads on slopes steeper than about 30 percent, or where regrading is required along the existing access roads that cross slopes. The suitability of the soils present in the Project site for road construction is presented in Table 4.7-1. Sloped areas underlain by expansive soils are more sensitive to road construction.

The proposed substation site is on gently sloping ground, and the potential for landsliding to affect the substation is considered low. The northern end of the Project, in proximity to pole 19/47, is potentially vulnerable to landslide resulting from access areas created for pole replacement or pull and tension sites. Where slopes are greater than 10 percent, no permanent access roads would be constructed and, upon Project completion, slopes would be restored to their original contours. In addition, erosion control Best Management Practices (BMPs)

would be installed during construction to minimize slope instability resulting from erosion. Impacts would be less than significant, and no mitigation would be required.

**b) Result in substantial soil erosion or the loss of topsoil?**

**Less than Significant Impact.** Soils disturbed during the construction process are subject to loss of vegetative cover, resulting in erosion onsite and sedimentation that would affect the Project or adjacent areas. The primary disturbance would occur in areas without existing access roads, where grading would occur for pulling and tensioning sites, and where grading would occur within the substation site. The proposed construction would begin during the dry season, reducing the potential for soil loss during construction. Development of site-specific erosion and sedimentation control plans as part of the SWPPP and implementation of BMPs designated therein would reduce the potential impacts to less than significant. Plans would also include revegetation of temporarily disturbed areas.

Special consideration would be given to installation of waterbars or other drainage facilities on roads located where road grades are steeper than five percent. Project timing and implementation of standard BMPs for erosion and sedimentation control would result in less than significant impacts.

The proposed substation site is located on ground with slope of approximately five percent, and susceptibility to erosion is considered low; however, construction scheduling and implementation of standard BMPs for erosion and sedimentation control would result in less than significant impacts, and no mitigation would be required.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

**Less than Significant Impact.** The Project would be located on geologic units derived from pyroclastic flow from Black Butte, 4.5 miles north of the Project, and on glacial deposits originating from Mt. Shasta. The Project would be located on soils derived from igneous, metamorphic, sedimentary, and volcanic rock. Potential impacts resulting from unstable soils has been discussed above; however, the Project would be located in an area that may be impacted by unstable geology in the form of volcanic hazards related to Mt. Shasta.

Mt. Shasta is a dormant stratovolcano; significant eruptions appear to have occurred every 250 to 300 years over the last 3,500 years (Hoblitt et al. 1987), and the last catastrophic debris avalanche occurred more than 300,000 years ago (Crandell 1989). Historical accounts indicate the most recent eruption of Mt. Shasta was in 1786, and radiocarbon dating of lithic ash preserved on the slopes of Mt. Shasta dates to approximately 200 years ago (Wood and Kienle 1990).

An eruption from Mt. Shasta could generate ash deposits that cover the Project area. An eruption could also generate lava flows, lahars, debris avalanches or debris flows. The probability that a lava flow will reach the Project area is considered high based on an assessment of Mt. Shasta by Hoblitt et al. (1987). The probability that a large eruption depositing thick layers of ash and pyroclastic deposits within about 30 miles of Mt. Shasta is reported as  $10^{-5}$  by Hoblitt et al. (1987). However, the Project would not add to that risk because the Project and the surrounding environment would run the same risk of loss of life and injury from volcanic eruption as exists currently.

Risk of injury or loss of life can be mitigated by evacuating personnel and mobile equipment during periods when a high risk of an imminent eruption has been identified. Volcanic eruptions are often preceded by an increase in seismic activity caused by movement of magma beneath the ground surface. State and federal officials would likely issue a warning, specifying the level of threat.

**d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?**

**Less than Significant Impact.** Shrink-swell soil behavior is a condition in which soil reacts to changes in moisture content by expanding or contracting. The three natural soil types identified within the Project area have low to moderate clay contents. Two soils have a low to moderate shrink-swell potential. Expansive soils may cause differential and cyclical foundation movements that can cause damage and/or distress to overlying structures and equipment. Design-level geotechnical studies would be performed as necessary to evaluate the potential for, and effects of, expansive soils where necessary, and substation installations would be designed and constructed according to current building codes. Mitigation may include excavation of expansive soils and replacement with properly compacted structural fill, as described in section a) **iii** above. As a result, potential impacts resulting from expansive soils would be less than significant; therefore, no mitigation would be required.

**e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

**No Impact.** The Project would generate waste water, and would not involve the use of septic tanks or alternative waste water disposal systems. No impact would occur, and no mitigation would be required.

## 4.8 Hazards and Hazardous Materials

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

### 4.8.1 Methodology

A Phase I Environmental Site Assessment (Phase I ESA) was conducted in July 2015 to address APN 036-220-280 and APN 036-220-170, as well as the transmission line and distribution line upgrade locations associated within the proposed Project. Previous Phase I ESA reports were prepared in 2011 and 2014, respectively. The record searches and field reconnaissance performed in 2011 and 2014 did not identify any obvious potential on-site or off-site sources of recognized environmental conditions (RECs). The Phase I ESA reports prepared for the proposed Project were conducted in accordance with ASTM Standard E1527-05, *Standard Practices for Environmental Site Assessments*. The updated Phase I ESA was performed in accordance with ASTM Standard E 1527-13, *Standard Practice for Environmental Site Assessments*. Each ESA was conducted by a Registered

Environmental Assessor. The ESAs included reconnaissance visits to the two properties, reviews of readily available literature and historic documentation of the properties, title reports, regulatory agency databases, searches for environmental cleanup liens, interviews with representatives of the local Environmental Health Department, and interviews with the current landowners.

## **4.8.2 Environmental Setting**

### **Regulatory Framework**

#### **Federal National Priorities List (40 CFR Part 300)**

The USEPA maintains a database of sites that are included on the National Priorities List (NPL). The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the USEPA in determining which sites warrant further investigation and remediation. Sites are listed on the NPL upon completion of Hazard Ranking System screening, followed by consideration of public comments on proposed listings.

#### **Federal Resource Conservation and Recovery Act (40 CFR Parts 239 - 282)**

The federal Resource Conservation and Recovery Act (RCRA) regulates hazardous waste from the time that the waste is generated through its management, storage, transport, treatment, and final disposal. The USEPA has authorized the California Department of Toxic Substances Control to administer the RCRA program in California.

#### **Federal Hazardous Materials Regulations (49 CFR Parts 171 - 180)**

The Federal Hazardous Materials Regulations (49 U.S.C. §1501 et seq.) identify the required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations applicable to the shipment and transportation of hazardous materials.

#### **Clean Water Act (33 U.S.C. § 1251 et seq.)**

The CWA was enacted to restore and maintain the chemical, physical, and biological integrity of the nation's waters by regulating point and nonpoint pollution sources, providing assistance to publicly owned treatment works for the improvement of wastewater treatment, and maintaining the integrity of wetlands. This includes the creation of a system, the National Pollutant Discharge Elimination System (NPDES), which requires states to establish discharge standards specific to water bodies and regulates storm water discharge from construction sites through the implementation of a SWPPP.

#### **Spill Prevention, Control, and Countermeasure Rule (40 CFR Part 112)**

The federal Spill Prevention, Control, and Countermeasure Rule (40 CFR Part 112) was enacted to require response and cleanup after a spill occurs and prevent discharge of oil into navigable waters of the United States or adjoining shorelines. Facilities subject to the rule must prepare and implement a plan called a SPCC Plan.

#### **Porter-Cologne Water Quality Act (California Water Code Section 13000 et seq.)**

The Porter-Cologne Water Quality Act is a state law that provides a comprehensive water quality management system for the protection of California waters. Porter-Cologne designated the State Water Resources Control Board as the ultimate authority over state water rights and water quality policy, and also established nine RWQCBs to oversee water quality on a day-to-day basis at the

local/regional level. The RWQCBs have the responsibility of granting NPDES permits for storm water runoff from construction sites.

The Central Valley RWQCB, Region 5R is responsible for protecting the beneficial uses of water resources in the Project vicinity. Two Basin Plans (i.e., one for the Sacramento and San Joaquin River Basins, and one for the Tulare Lake Basin) contain the water quality standards for the Central Valley Region and implementation programs and policies to achieve these standards. The Region 5 Basin Plans were originally adopted in 1975 with major updates and revisions occurring in 1984, 1989, 1994, 1998, and 2007. In addition, about every three years, a triennial basin plan review is completed that assesses the appropriateness of existing standards and evaluates and prioritizes basin planning issues (Central Valley RWQCB 2009). The goal of the Basin Plan is to provide a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of water in the Central Valley Region. The Basin Plan is used as a regulatory tool by the RWQCB. The RWQCB orders cite the Basin Plan's water quality standards and prohibitions applicable to a particular discharge.

CPUC G.O. 95 and CPUC G.O. 165

These General Orders by the CPUC specify construction, operation, and maintenance requirements for electrical facilities.

California Code of Regulations

The CCR is a catalog of state laws and regulations adopted by state agencies, including:

- CCR Title 8, Section 2700 et seq., High Voltage Electrical Safety Orders, establishes essential requirements and minimum standards for installation, operation, and maintenance of electrical equipment to provide practical safety and freedom from danger.
- CCR Title 14, Section 1250-1258, Fire Prevention Standards for Electric Utilities, provides specific exemptions from electric pole and tower firebreak and electric conductor clearance standards, and specifies when and where standards apply.

California Health and Safety Code Section 25501

California law defines a hazardous material as any material that, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may pose a present or potential hazard to human health and safety or to the environment if released in the workplace or the environment (California Health and Safety Code Section 25501). A hazardous waste is defined as a discarded material of any form (e.g., solid, liquid, gas) that may pose a present or potential hazard to human health and safety or to the environment when improperly treated, stored, transported, disposed of, or otherwise managed (California Health and Safety Code Section 25117).

California Resource Conservation Recovery Act (22 CCR Division 4.5)

California's RCRA hazardous waste program is more stringent than the federal program, and certain wastes that would not qualify as hazardous based on federal standards may still qualify as hazardous waste according to California standards (termed non-RCRA hazardous waste). Handling and storage of fuels, flammable materials, and common construction-related hazardous materials are governed by the California Occupational Safety and Health Administration.

## California Public Resources Code

California PRC Sections 4292 and 4293 specify requirements related to vegetation management in transmission line corridors.

### **Existing Conditions**

The Project area covers a large area of land located in Siskiyou County and the City of Mt. Shasta, California, including APN 036-220-280 and APN 036-220-170, as well as the transmission line and distribution line upgrades locations associated with the proposed Project. The proposed Lassen Substation site contains two vacant residences (located at 504 and 506 South Old Stage Road), a garage, two well sheds, storage sheds, and chicken coops. The transmission and distribution lines are located in areas containing residences, a mobile home park, a hotel, a senior apartment community, undeveloped land, I-5, a power substation, a gasoline station, and commercial buildings. Utility pole-mounted transformers were observed on the portions of the property consisting of over-head distribution lines.

### Hazardous Waste

To determine the existence, if any, of potential areas of environmental hazard in the vicinity of the properties, 91 federal, state, local, tribal, and proprietary records databases were reviewed in 2011. The properties comprising the proposed Lassen Substation site, and the properties immediately adjacent, were not listed on the databases reviewed. Within a one-mile radius of the properties, five sites were identified that were listed as hazardous materials use, storage, disposal, or release sites. Of these sites, one did not involve a reported release of hazardous materials, and is therefore not considered a recognized environmental condition (REC) for the proposed Project site. The remaining four sites each involved a reported spill or release of hazardous materials, but all have received regulatory agency closure, and are not considered recognized environmental hazards for the proposed Project. None of the five sites are considered a recognized environmental hazard for the proposed Project site (ENPLAN 2011a and 2011b).

In order to determine if any changes have occurred on or in the vicinity of the Project site, 106 federal, state, local, tribal, and proprietary records databases were reviewed as part of the Updated ESA prepared in 2014. The Project site and adjoining properties were not identified on the databases reviewed. Seven sites were identified within a one-mile search radius of the Project site. Two of the seven identified sites have not had a reported release of hazardous materials and are not considered a REC for the Project site. The remaining five identified sites each had a reported spill or release of hazardous materials, but all have received regulatory agency closure, and are not consider a REC for the Project site (ENPLAN 2014).

No stained soils, discolored water, distressed vegetation, or obvious wastewater discharge were found on either property. No strong, pungent, or noxious odors were noticed on either property. With the exception of the heating oil and propane aboveground storage tanks (ASTs), no current or past activities likely to involve the use, treatment, storage, disposal, or generation of regulated quantities of hazardous substances or petroleum products were identified in the 2011 and 2014 Phase I ESA reports.

An additional Phase I ESA was performed 2015 to include the distribution line upgrades in the proposed Project. In order to determine the existence, if any, of potential areas of environmental hazard on or in the vicinity of the of the proposed Project 106 federal, state, local, tribal, and proprietary records databases were reviewed as part of the Phase I ESA prepared in 2015. As part of this database search, the Project site was not identified as a hazard materials use, storage, disposal or

release site. No institutional controls or engineering controls were identified for the Project site. Sixteen sites were identified in the immediate vicinity of the Project (refer to the 2015 Phase I ESA in Appendix F). One hundred and eleven additional hazardous materials use, storage, disposal, or release sites were identified within a one-mile search radius of the Project site. Of those identified, 75 have not had a reported release of hazardous material and are not considered a REC for the Project site. Thirty-three sites have had a reported spill or release of hazardous materials and have received agency closure, and are therefore not considered a REC for the Project site (ENPLAN 2015).

Three hazardous materials sites have not received regulatory closure (refer to the 2015 Phase I ESA in Appendix F):

**McGregor Residence:** Located approximately 0.5 miles northeast of the Project area. This residence is identified on the leaking underground storage tank (LUST) database. The status of this case is listed as “preliminary site assessment underway.”

**Hawkins Family Trust:** Located approximately 0.5 miles northeast of the Project area. This site is identified on the LUST database. The status of this case is listed as “preliminary site workplan submitted.”

**Abreu Property:** Located approximately 0.25 miles west of the Project area. This site is identified on the LUST database. The status of this case is listed as “post remedial action monitoring.”

While the three properties have not received regulatory closure, it was determined by record searches on the RWQCB GeoTracker website, that these sites are not considered a REC for the Project site.

No obvious potential off-site sources of contamination were identified within the one-mile search radius from the Project area. No obvious RECs for the Project site or adjacent parcels were noted from the 106 government databases reviewed.

### Emergency Response

Siskiyou County has not adopted an Emergency Evacuation Plan or Response Plan. Siskiyou County, however, is currently in the planning process for the Siskiyou County Multi-Jurisdictional Hazard Mitigation Plan (HMP). The HMP will be a collaborative planning effort between Siskiyou County and local jurisdictions and special districts within the county. Jurisdictions that have chosen to participate are members of the Planning Partnership. The HMP will identify all natural hazards within Siskiyou County and will outline the history, future vulnerability, and future damage potential for each hazard. The Plan’s goal is to identify mitigation projects that will reduce the vulnerability and damage potential of each hazard. The plan will address earthquake, flood, wildfire, landslide/other earth movement, drought, severe weather/storm, dam failure, and volcano/lahar/ash fall hazards (Siskiyou County 2014).

### Wildland Fires

The proposed Project site is located in the southern portion of Strawberry Valley, which is surrounded by the Shasta National Forest. Pine trees and other highly flammable vegetation cover many of the surrounding properties, including the proposed Project site. The California Department of Forestry and Fire Protection (Cal Fire) maps Fire Hazard Severity Zones (FHSZs) based on fuels, terrain, weather, and other relevant factors; these FHSZs define the application of various mitigation strategies to reduce risk associated with wildland fires. The proposed Project would be situated in an

area designated as a Very High Fire Hazard Severity Zone by Cal Fire (Cal Fire 2007). Fire protection services for the Project site are provided by the Mt. Shasta Fire Protection District.

### Airports and Airstrips

No public or private airports, as well as private airstrips, were identified in the Project area (U.S. Department of Transportation [USDOT] 2010). The nearest commercial service airports are located in Redding and Medford, Oregon. The closest airport to the Project, Dunsmuir Municipal-Mott Airport, serves only light aircraft and is located approximately four miles southeast of the proposed Project.

### Schools

The City of Mt. Shasta is served by the Mt. Shasta Union School District (MSUSD) and the Weed Union Elementary School District (WUESD) and the Siskiyou Union High School District ([SUHSD] 2014). The MSUSD and WUESD districts formed a partnership to share administrative services (MSUSD and WUESD 2014). The MSUSD and WUESD are comprised of four schools: Mt. Shasta Elementary School, Sisson Elementary School, Strawberry Valley School and Weed Elementary (kindergarten through 8<sup>th</sup> grades) (MSUSD and WUESD 2014). Mt. Shasta Elementary School is located at 501 Cedar Street approximately 0.6 mile from the proposed substation site and serves kindergarten through 3<sup>rd</sup> grades, while Sisson Elementary School and Strawberry Valley School are both located approximately 1.2 miles from the site at 601 East Alma Street. Sisson Elementary School serves 4<sup>th</sup> through 8<sup>th</sup> grades and Strawberry Valley School serves 2<sup>nd</sup> through 5<sup>th</sup> grades. The SUHSD has six schools within the district and two schools within the City of Mt. Shasta: the Mt. Shasta High School, located at 710 Everitt Memorial Highway, and Jefferson High School, located at 720 Rockfellow Drive (SUHSD 2014). Both high schools are located approximately 1.4 miles from the proposed Project site. The Mt. Shasta One Bus has a daily afternoon scheduled stop at 511 South Old Stage Road, located 200 feet from the substation access road (MSUSD and WUESD 2014). Other schools within the City of Mt. Shasta include the Challenge Home Charter School located at 601 East Alma Street, the Mt. Shasta Options for Youth located at 510 North Mt. Shasta Boulevard, and the South County Community Day School located at 720 Rockfellow Drive, and the I AM School, a private school, located at 118 Siskiyou Ave., Mt. Shasta (approximately 0.5 mile from the Project alignment).

## **4.8.3 Environmental Impacts**

Would the Project:

- a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

### Construction Impacts

**Less than Significant Impact.** Construction of the proposed Project would require the use of fuel and lubricants inside vehicles and equipment. A Project-specific health and safety plan would be prepared and made available once a contractor is procured for the construction of the proposed Project (refer to APM HAZ-1). The plan would include, but not be limited to, information on the appropriate personal protective equipment to be used during construction. All transport of hazardous materials would be in compliance with applicable laws, rules and regulations, including the acquisition of required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations.

Construction of the proposed Project, as well as demolition of the existing Mt. Shasta Substation, would result in the generation of various waste materials that can be recycled and salvaged. Waste items and materials would be collected by construction crews and separated into roll-off boxes at the staging areas. All waste materials that are not recycled would be characterized by PacifiCorp in order to ensure appropriate final disposal. Non-hazardous waste would be transported to local waste management facilities. When possible, waste materials from the construction of the proposed Project would be delivered to the closest waste management facility, which is located within one mile of the proposed substation site.

Prior to removal of existing poles, existing subtransmission lines, distribution lines and telecommunication lines (where applicable) would be transferred to the new poles. All remaining subtransmission, distribution and telecommunication lines that are not reused by PacifiCorp would be removed and delivered to a suitable facility for recycling. The removed wood poles would be disposed of in a Class I hazardous waste landfill, or in a lined portion of a RWQCB-certified municipal landfill.

Soil excavated for the proposed Project would either be used as fill or disposed off site at an appropriately licensed facility. In the event that contaminated soil is encountered during excavation activities, the soil would be segregated, and soil samples would be collected and analyzed to determine appropriate disposal/treatment options. If chemicals are detected in the soil samples at concentrations above action levels, PacifiCorp would decide whether to remove the contaminated soil, or modify the design of the proposed Project to the extent necessary to avoid contaminated soil. Action levels refer to chemical-specific concentration thresholds in environmental media that, if exceeded, trigger some form of regulatory oversight. Therefore, impact to the public or the environment through the routine transport, use or disposal of hazardous materials would be less than significant.

In addition, the two residences on the Project site are likely to be demolished. If they are demolished, PacifiCorp would be required to comply with State and federal regulations pertaining to the demolition of structures with lead-based paint (LBP) and/or asbestos-containing materials (ACM). Federal and state lead regulations (29 CFR Part 1926.62 and CCR Title 8, section 1532.1) regulate disturbance of lead-containing materials during construction, demolition, and maintenance-related activities. In the event ACM or LBP were found, procedural requirements would facilitate the proper and safe removal of hazardous materials.

### **Operation Impacts**

**Less than Significant Impact.** During operation of the proposed Project, routine inspections and emergency repair would require the use of fuel and lubricants inside vehicles and equipment. All transport of hazardous materials would be in compliance with applicable laws, rules and regulations, including the acquisition of required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations. As a result, impacts due to the routine transport, use, or disposal of hazardous materials would be less than significant.

- b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

### **Construction Impacts**

**Less than Significant Impact.** Construction of the proposed Project would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. Due to the low volume and low toxicity of the hazardous materials to be used during the construction of the proposed Project, the potential for environmental impacts from hazardous material incidents is less than significant. All hazardous materials would be stored, handled and used in accordance with applicable regulations, and Material Safety Data Sheets would be made available at the construction site for all crew workers.

The most likely incidents involving these hazardous materials are associated with minor spills or drips. Impacts from such incidents would be avoided by thoroughly cleaning up minor spills as soon as they occur. A site-specific construction SWPPP would be prepared for the proposed Project and would be implemented to ensure quick response to any spills to avoid impacts to the environment (refer to APM WQ-1). The SWPPP would provide the locations for storage of hazardous materials during construction, as well as protective measures, notifications, and cleanup requirements for any incidental spills or other potential releases of hazardous materials. Any impacts that would result from an accidental release would be addressed through the SWPPP.

In addition, implementation of the Hazardous Substance Control and Emergency Response Plan would provide site personnel with instruction on the proposed Project SWPPP and site-specific BMPs. It would also provide instructions to notify the foreman and regional spill response coordinator in case of a hazardous materials spill or leak from equipment, or upon the discovery of soil contamination.

During construction activities for the proposed Project, the potential for encountering and damaging subsurface utilities (e.g., a natural gas line) or structures (e.g., an underground storage tank) exists, which could result in a release of a hazardous material. Such incidents would be avoided by thoroughly screening for subsurface structures prior to starting subsurface work. Screening activities would include use of Dig Alert, visual observations, and the use of buried line locating equipment.

Therefore, the Project would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, and impacts are less than significant.

### **Operation Impacts**

**Less than Significant Impact.** The proposed substation would be equipped with transformer banks that contain mineral oil that could leak or spill if the transformers were damaged from a seismic event, fire, or other accident scenario. To minimize potential impacts in the event a transformer is damaged, the design of the proposed substation would provide secondary containment and/or diversionary structures or equipment to prevent discharge of an oil spill, as described in the SPCC Plan that would be prepared for the proposed Project during final design (refer to APM HAZ-3). An SPCC Plan would be prepared and implemented by PacifiCorp before oil-containing equipment is brought to the proposed substation site. Impacts would be less than significant.

- c) **Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**No Impact.** There are no schools within 0.25 mile of the proposed Project; the nearest school is the I AM School (a private school) located approximately 0.5 mile from the proposed Project site. PacifiCorp would adhere to all federal, state, and local laws in regard to hazardous waste materials containment, control, and transport. Project construction and operation is not expected to result in a release of hazardous emissions, substances, or waste, and there would be no impact.

- d) **Be located on a site which is included on a list of hazardous materials site compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

**No Impact.** Based on the Phase I ESA reports prepared by ENPLAN for the proposed Project (see Appendix F), the proposed Project is not located on a known hazardous waste site. As a result, there would be no impact to the public or the environment from being located on a site included on a list of hazardous materials sites.

- e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

**No Impact.** No known public use airport, as identified within the *Siskiyou County Airport Land Use Compatibility Plan 2001*, is located within the vicinity of the Project site. The closest airport to the Project vicinity is the Dunsmuir Municipal-Mott Airport, located approximately four miles southeast of the proposed Project. In addition to the construction of the new substation, the project would involve replacing 36 wood poles with upgraded wood poles framed for 115 kV and distribution underbuild and the installation of three new wood poles to connect the existing transmission system to the new Lassen substation. The new wood poles are expected to be similar in height to the existing poles. The maximum height of the new transmission poles would be 75 feet. The proposed Project, however, does not cross any compatibility zones associated with the Dunsmuir Municipal-Mott Airport and, therefore, would not conflict with the *Compatibility Plan*. The proposed Project would not result in the construction of structures or create a safety hazard for persons working in the Project area.

- f) **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

**No Impact.** There are no private airstrips within two miles of the proposed Project. Therefore, there would be no safety hazard for personnel during construction or operation of the proposed Project, and no impact to people residing or working in the proposed Project area.

- g) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

### **Construction Impacts**

**Less than Significant Impact.** In places where Project construction may require a temporary road closure, construction activities would be coordinated with the local jurisdiction so as not to cause closure of any emergency access route. Flaggers may briefly hold traffic back for construction equipment, but emergency vehicles would be provided access even in the event of

temporary road closures. Therefore, emergency access would not be impacted by construction of the proposed Project because streets would remain open to emergency vehicles at all times during these activities. The impacts would be less than significant.

### **Operation Impacts**

**No Impact.** Siskiyou County has not adopted an Emergency Evacuation Plan or Response Plan. Electrical facilities, however, are typically considered critical facilities in emergency response plans, and every effort would be made by PacifiCorp to maintain electrical service during emergencies. As a result, operation of the proposed Project would have no impact to emergency plans.

- h) **Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

### **Construction Impacts**

**Less than Significant Impact.** The proposed substation and transmission and distribution lines are located in an area mapped as Very High Fire Hazard. PacifiCorp has standard protocols that include measures to address smoking and fire rules, storage and parking areas, use of gasoline-powered tools, use of spark arresters on construction equipment, road closures, use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. Trained fire suppression personnel and fire suppression equipment would be established at key locations, and the personnel and equipment would be capable of responding to a fire within 15 minutes of notification. Portable communication devices (e.g., radio or mobile telephones) would be available to construction personnel.

In addition to these protective measures, the proposed Project site would be grubbed of vegetation and graded prior to the staging of equipment, minimizing the potential for a construction vehicle to start a fire. During grubbing and grading, PacifiCorp's standard fire-prevention protocols, including the use of spark arresters on construction equipment, would minimize the potential for these activities to ignite fires. The construction of the proposed Project would not result in increased risk of wildfires in the Project area. Regardless, the proposed Project would comply with applicable wildland fire management plans and policies established by state and local agencies. Based on compliance with applicable regulations, the proposed Project is not expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts would be less than significant.

### **Operation Impacts**

**Less than Significant Impact.** The proposed Project may pose a fire hazard if vegetation or other obstructions come into contact with energized electrical equipment. The proposed Project would be constructed and maintained in a manner consistent with CPUC GO-95 and CPUC GO-65. Consistent with these and other applicable State and federal laws, PacifiCorp would maintain an area of cleared brush around the equipment, minimizing the potential for fire. As a result, operation of the proposed Project would have a less than significant impact to risk of loss, injury or death involving wildland fires.

## 4.9 Hydrology and Water Quality

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
f) Otherwise substantially degrade water quality?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
j) Inundation by seiche, tsunami, or mudflow?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

### 4.9.1 Methodology

Information on surface and groundwater in the Project area was obtained from a variety of sources, including USGS topographic quadrangle maps (USGS 1986), studies completed for and by state and local water agencies, and Federal Emergency Management Agency (FEMA) maps. Environmental Specialists from POWER conducted field reviews of the Project area in September and October 2009, and in July 2015, to assess potential effects associated with the proposed Project. Details of the field

surveys are included in the *Jurisdictional Delineation* (provided in Appendix D of the PEA). Potential impacts were evaluated by considering the construction activities and the continued operation of the Project components.

## 4.9.2 Environmental Setting

### Regulatory Framework

**Section 404 Clean Water Act.** Waters of the U.S. including wetlands are subject to USACE jurisdiction under Section 404 of the CWA. A Section 404 permit is required for the discharge of dredged or fill material into Waters of the U.S. The Sacramento District of the USACE would provide review and permitting services for this Project.

*Definition of the Waters of the United States.* Waters of the U.S., as applied to the jurisdictional limits of the authority of the USACE under the CWA, is defined in 33 CFR Part 328.3(b) as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.” The 1987 *Corps of Engineers Wetlands Delineation Manual* required that wetlands possess the following characteristics: (1) the prevalent vegetation be comprised of hydrophytic species; (2) soils may be classified as hydric, or soils possess characteristics that are associated with reducing soils conditions; and, (3) hydrologic conditions are present in that the area is inundated either permanently or periodically at mean water depths  $\leq 6.6$  feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

Following the Supreme Court’s decision in the consolidated cases *Rapanos v. United States* (2006) and *Carabell v. United States* (2006) (referred to as “*Rapanos*”), the jurisdiction of Waters of the U.S. was refined, giving the USACE jurisdiction over specific waters such as traditional navigable waters, tributaries of traditional navigable waters, and wetlands that abut both types of waters (USACE and USEPA 2007).

In June 2015, the Environmental Protection Agency (EPA) and the USACE jointly published a final rule defining the scope of waters and wetlands protected under the CWA in light of the statute, science, the *Rapanos* decision, and the agencies’ experience and technical expertise (EPA and USACE 2015). This final rule clarifies the scope of “waters of the United States” protected under the CWA to include:

- Traditional navigable waters (TNW), interstate waters, and the territorial seas (known water of the U.S.)
- Impoundments of jurisdictional waters
- Covered **tributaries** (tributaries to TNWs, interstate waters, territorial seas)
- Covered **adjacent waters** (adjacent to TNWs, interstate waters, territorial seas, impoundments, covered tributaries)
- Certain waters with significant nexus to a TNW, an interstate water, or a territorial sea (e.g., vernal pools, prairie potholes)
- All waters with significant nexus to a TNW, an interstate water, or a territorial sea that are located either:
  - Within the 100-year floodplain of a TNW, interstate water, or territorial sea
  - Within 4,000 feet of the high tide line or ordinary high water mark of a TNW, interstate water, territorial sea, impoundment, or covered tributary

The final rule defines covered tributaries as:

- A water that contributes flow, either directly or indirectly, or through another water to a known water of the U.S.
- A water that is characterized by the presence of the physical indicators of a bed and bank, and an ordinary high water mark (OHWM).

Covered tributaries may be perennial, intermittent, or ephemeral.

The final rule defines covered adjacent waters as

- Waters bordering, contiguous to, or neighboring to a water of the U.S. as defined above.
- “Neighboring” includes waters that are located within:
  - 100 feet of the OHWM of a jurisdictional water;
  - 100-year *floodplain* of a jurisdictional water AND not more than 1,500 feet from the ordinary high water mark; or
  - 1,500 feet of the high tide line of a known water of the U.S., including the Great Lakes.

The entire water is considered “neighboring” even if only a portion of that water is within the covered area.

The USACE has also produced a series of Regional Supplements to the 1987 *Manual*, providing technical guidance and procedures for identifying and delineating wetlands that may be subject to Section 404 CWA. These Regional Supplements address wetland characteristics that, due to regional differences climate, geology, soils, hydrology, plant and animal communities, and other factors (USACE 2008a), may not meet the characteristics identifying in the 1987 *Manual*. The proposed Project falls within the Western Mountains, Valleys, and Coasts Region.

**Section 401 Clean Water Act.** Pursuant to Section 401 of the CWA, a water quality certification is required from the California SWRCB for Section 404 permit activities in multiple Regions. The SWRCB certifies that the discharge complies with state water quality standards and ensures that there is no net loss of wetlands through impact avoidance, minimization, and mitigation. The Central Valley RWQCB (Region 5R) would provide review and water quality certification services for the Project.

**Section 303(d) Clean Water Act.** Section 303(d) unites the water quality management strategies of the CWA. Section 303(d) requires that states make a list of waters that exceed the minimum level of pollutants put in place by the CWA. For waters on this list the states must develop total maximum daily loads (TMDLs) which account for all sources of the pollutants that caused the water to be listed. The TMDLs must account for contributions from both point sources and nonpoint sources, as defined by Section 402 of the CWA. In California, the SWRCB has interpreted state law (see Porter-Cologne Water Quality Control Act below) to require that implementation of TMDLs be addressed when incorporated into Basin Plans (water quality control plans).

**Spill Prevention, Control, and Countermeasure Plan.** The USEPA’s Oil Pollution Prevention regulation (40 CFR Part 112) requires Spill Prevention, Control, and Countermeasure Plan (SPCC) plans for facilities with a total above-ground oil storage capacity of greater than 1,320 gallons to prevent oil spills from reaching Waters of the U.S.

**Porter-Cologne Water Quality Control Act.** The Porter-Cologne Water Quality Control Act defines “water quality objectives” as the allowable “limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.” Thus, water quality objectives are intended to protect

the public health and welfare, and to maintain or enhance water quality in relation to the existing and/or potential beneficial uses of the water. Water quality objectives apply to both Waters of the U.S. and Waters of the State.

**Basin Plans.** The SWRCB requires individual RWQCBs to develop Basin Plans (water quality control plans) designed to preserve and enhance water quality and protect the beneficial uses of all Regional waters. Specifically, Basin Plans designate beneficial uses for surface waters and groundwater, set narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the State's antidegradation policy, and describe implementation programs to protect all waters in the Regions. In addition, Basin Plans incorporate by reference all applicable State and Regional Board plans and policies, and other pertinent water quality policies and regulations.

The Lassen Substation Project is under the jurisdiction of the Basin Plan of the Central Valley RWQCB. In 1998, the RWQCB adopted the Fourth Edition of the Water Quality Control Plan (Basin Plan) for the Sacramento River Basin and the San Joaquin River Basin. The Basin Plan has been updated and revised numerous times since 1998, most recently in October 2007. The Basin Plan provides a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses of waters in the Central Valley Region in accordance with the Porter-Cologne Water Quality Control Act.

**Construction Storm Water Program.** The SWRCB and the nine RWQCBs implement water quality regulations under the federal CWA and California Porter Cologne Water Quality Control Act. Existing water quality regulations require compliance with the NPDES for discharges of storm water runoff associated with a construction activity.

Dischargers whose projects disturb one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity (Construction General Permit Order 2009-2009-DWQ). Construction activity subject to this permit includes clearing, grading, and disturbances to the ground such as stockpiling or excavation, but does not include regular maintenance activities performed to restore the original line, grade, or capacity of the facility.

The Construction General Permit requires the development and implementation of a SWPPP. The SWPPP should contain a site map(s) that shows the construction site perimeter, existing and proposed buildings, lots, roadways, storm water collection and discharge points, general topography both before and after construction, and drainage patterns across the Project. The SWPPP must describe BMPs the discharger will use to protect storm water runoff and the placement of those BMPs. Additionally, the SWPPP must contain a visual monitoring program, a chemical monitoring program for "non-visible" pollutants to be implemented if there is a failure of BMPs, and a sediment monitoring plan if the site discharges directly to a water body listed on the 303(d) list for sediment.

**Lake or Streambed Alteration Agreement.** Section 1602 of the CDFG Code protects the natural flow, bed, channel, and bank of any river, stream, or lake designated by the CDFW, in which there is at any time an existing fish or wildlife resource, or from which these resources derive benefit. General project plans must be submitted to CDFW in sufficient detail to indicate the nature of a project for construction, if the project would:

- Divert, obstruct, or change a streambed
- Use material from the streambeds
- Result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a stream

The Northern Region of the CDFW serves Siskiyou County.

**California Health Code.** The California Health Code requires wells that are abandoned or permanently inactive must be destroyed in accordance with standards developed by the California Department of Water Resources (DWR), to preserve groundwater from becoming contaminated.

**California Water Code.** Pursuant to Section 13800, the DWR has developed standards for the destruction of wells. Wells that are no longer useful must be destroyed to ensure that the groundwater supply is protected and preserved for further use, and to eliminate the well as a potential physical hazard. In destroying the well, subsurface conditions must be restored as much as possible to those conditions that existed before the well was constructed (DWR 74-81 and 74-90 Part III).

### **Existing Conditions**

The proposed Project is located at the southern end of Strawberry Valley, within the southern end of the Cascade Gulch-Mount Shasta Hydrologic Unit (HUC 180200050103) which drains an area of approximately 28.7 square miles (74.4 square kilometers), and is located at the northern end of the Sacramento Headwaters Watershed (HUC 18020005). The Cascade Gulch-Mount Shasta Hydrologic Unit lies within the Cascade Range Province.

Elevations in the project area range from approximately 3,400 feet to 3,800 feet (1,036 meters to 1,158 meters) in the valley, and the elevation in the surrounding mountains climbs to 14,162 feet (4,316 meters) (Mt. Shasta). Average annual maximum temperature in the City of Mt. Shasta is 62.4°F (16.9 degrees Celsius [°C]) and average annual minimum temperature is 36.7°F (2.6°C). Annual precipitation averages 40.0 inches (101.6 centimeters) and annual snowfall averages 103.1 inches (261.9 centimeters), most of which occurs from November through March (WRCC 2015).

The proposed Lassen Substation is located approximately 0.2 mile southeast of Cold Creek; the northern portion of the transmission line crosses Cold Creek between Poles 9/48 and 10/48. A distribution line parallels Cold Creek on the north. This distribution line is proposed to be removed from Pole 9/48 of the transmission line to Pole 162202 of the distribution line, approximately 100 feet west of the edge of pavement for the southbound I-5. Cold Creek is fed primarily by springs located near Jessie and Spring Streets in the City of Mt. Shasta on the east side of I-5, and discharges into Lake Siskiyou one mile south of the proposed Project.

The Mt. Shasta Fish Hatchery, operated by the CDFW, is located approximately 0.5 mile northeast of the proposed Lassen Substation. Big Springs Creek, which flows from a spring located in Mt. Shasta City Park approximately 1.7 miles north of the proposed Project, provides water for the hatchery's flow-through system; water enters the hatchery from Big Springs, and the effluent drains into Cold Creek approximately 0.15 mile west of the existing Mt. Shasta Substation.

Flood hazard data from FEMA indicates the proposed Project is not located within a 100-year floodplain. FEMA has not mapped any floodplains in the Project vicinity (FEMA 2015).

Groundwater in the Mt. Shasta area occurs within a volcanic aquifer (i.e., groundwater source area), in which water occurs within fractures resulting from cooling or changes in the crust of the earth, or in lava tubes, weathering surfaces, and porous tuff beds. Occasionally, these aquifers may overlie buried alluvial deposits. Groundwater availability in volcanic formations can vary widely, even over a distance of several yards. The volcanic aquifer of the Mt. Shasta Area was deleted as a "groundwater basin" by the DWR after 1980 (Bulletin 118-80), and limited data exists for this volcanic aquifer. Geological bore samples taken on February 28, 2011 on the site of the proposed substation encountered free groundwater from 4.0 to 5.0 feet below the surface, with soil saturation between 1.0 and 2.5 feet below soil surface. Groundwater levels may fluctuate seasonally, depending on climatic conditions.

The National Wetlands Inventory has mapped palustrine emergent (PEM) wetlands and palustrine scrub-shrub (PSS) wetlands in the Project vicinity. Wetland delineation surveys conducted in September 2011 and July 2015 mapped areas of extensive PEM and PSS wetlands crossed by the ROW from pole 21/47 south to pole 2/48, from the existing substation north to Hatchery Lane, and from pole 20/47 northeast along the distribution ROW to Smith Road. Several smaller waters and wetlands are crossed by the ROW south of the existing substation.

From Smith Road south to Hatchery Lane are PEM and PSS wetlands that have been degraded by cattle and horse grazing, especially south of pole 20/47. These wetlands are fed by a combination of springs, precipitation, snowmelt, and runoff from the streets of the City of Mt. Shasta to the east (Theiss 1990, ENPLAN 2015). Water from these wetlands flows south under Hatchery Lane and into a second wetland, eventually discharging into Cold Creek (ENPLAN 2015), which emerges from beneath I-5 and flows southwest perpendicular to the transmission line.

South of the existing substation, near poles 23/48 and 24/48, are two seeps that receive water from an agricultural ditch running at the eastern edge of the property. Water reaches the surface as the slope intersects groundwater level, and surface water flows southwest toward the center of the field, outside the PacifiCorp ROW.

Most of these wetlands are dry- and wet-montane meadows except for one section of freshwater marsh that is surrounded by exclusion fencing; Poles 22/47 and 23/47 lie within this freshwater marsh.

The property between Hatchery Lane on the north and Cold Creek on the south consists of natural PEMC wetlands (also dry montane meadows), as well as natural PEM wetlands characterized as wet montane meadows, freshwater marsh, and riparian scrub. Cold Creek is an upper perennial riverine wetland of an unknown surface and aquatic bed (R3AB6) and is bordered by riparian scrub habitat. South of Cold Creek is a combination of natural and created wetlands, as well as non-wetland natural areas (characterized by dry montane meadows vegetation communities) that were set aside as wetland mitigation (Theiss 1990) for local development. In 2000, both properties were declared the Morgan-Merrill Wildlife Preserve (County of Siskiyou 2000) as part of a mitigation plan.

For additional information, please see the *Jurisdictional Delineation Report* in Appendix D.

The City of Mt. Shasta receives most of its municipal water supply from Cold Creek Springs, located east of the city at an elevation of 4,400 feet. In the Strawberry Valley area, domestic and agricultural supply needs have historically been met through surface water diversions and from springs. Groundwater is used increasingly for domestic and agricultural supply.

### 4.9.3 Environmental Impacts

Would the Project:

**a) Violate any water quality standards or waste discharge requirements?**

**Less than Significant Impact.** Project construction has the potential for temporary and minor increases in sedimentation. Soils along the Project have a slight to moderate potential for rill and sheet erosion, and therefore temporary sedimentation could occur from stormwater runoff at the substation site, staging area, pole locations, pull and tension sites, access roads, and other disturbed sites during construction activities. Ground disturbance would be limited to grading activities within the substation site and excavating for pole sites and underground cabling areas. Excavation for pole holes in wetland with standing water or adjacent to wetland areas may result

in a discharge of sediment to surface waters. In addition to sediment, water pollutants, such as petroleum-based fuels and hydraulic fluids, may be generated by inadvertent releases from construction vehicles and equipment. Such pollutants may become mingled with stormwater and discharged into surface water or groundwaters, resulting in water quality degradation.

The Project proponent would develop and implement a SWPPP prior to commencement of ground-disturbing activities. As required by the SWRCB, the SWPPP would outline measures to minimize or prevent erosion, sedimentation, or the release of pollutants into stormwater during construction of the Project. To minimize impacts related to erosion and discharge of pollutants, BMPs outlined in the SWPPP would be applied as required by NPDES General Construction Activity Storm Water Permit (refer to APM WQ-1). Implementation of BMPs identified in the SWPPP would ensure that the proposed Project would comply with federal, State, and local water pollution control regulations. Therefore, the Project would not violate any water quality standards or waste discharge requirements and impacts to water quality related to erosion during construction would be less than significant

Operational discharges are not anticipated; however, they could occur through accidental spills or release of fluids such as coolant oil associated with operation of the new Lassen Substation. As required by USEPA regulations, the Project proponent would prepare a SPCC Plan and incorporate it into the Lassen Substation design to prevent discharge of oils from leaving the substation, or entering surface waters, wetlands, or groundwater (refer to HAZ-3).

An artesian well is located on the proposed Lassen Substation site, and would be located within the footprint of the new substation. Prior to ground-disturbing activities, this well would be destroyed and sealed in accordance with DWR standards and the California Health Code to prevent contamination of groundwater during construction and operation of the new substation.

With implementation of Project APMs, WQ-1 through WQ-3 and HAZ-3, potential construction-related and operational impacts to water quality would be less than significant.

- b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?**

#### **Construction Impacts**

**Less than Significant Impact.** Construction of the Project and removal of the Mt. Shasta Substation would not involve the removal or the addition of groundwater from the Project area. Construction and operation of the Lassen Substation would not introduce a substantial increase of impermeable surfaces, and removal of Mt. Shasta Substation would not include addition of impermeable surfaces.

Construction of the new Lassen Substation and access road improvement or construction would consist primarily of a substrate of dirt or gravel.

Prior to ground-disturbing activities, the artesian well described above would be destroyed and sealed in accordance with DWR standards and the California Water Code to prevent both nuisance flow and potential lowering of the local groundwater table.

Groundwater may be encountered during construction, as indicated by geologic borings. Dewatering activities would be limited to dewatering excavations (for the placement of the poles). If this would be necessary, the effect would be localized and short in duration. Dewatering operations would be implemented as described in the SWPPP, and groundwater would not be discharged to Waters of the U.S. but would be contained within the work area, as feasible, using standard stormwater BMPs (e.g., straw wattles) and allowed to percolate back to the ground. Therefore, impacts related to substantially depleting groundwater supplies or interfering substantially with groundwater recharge would be in a less than significant.

### **Operation Impacts**

**No Impact.** Project operation would not involve the use of groundwater; therefore, there would be no impacts to groundwater supplies and recharge.

- c) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

**Less than Significant Impact.** Minor alteration to existing drainage patterns may occur as a part of construction. Stormwater drainage inside the substation would be designed to minimize erosion and increase sediment control, and minimize potential erosion or sedimentation impacts to adjacent wetlands. During pole replacement and upgrade of the transmission line, some areas may require blading to allow for safe access of construction vehicles and equipment. Vehicles and equipment necessary for reconductoring of the distribution line would be situated in upland areas, as feasible, or on paved city streets. Work areas, including areas requiring blading or clearing, would be clearly marked. Construction vehicles and equipment would be prohibited from disturbing slopes and drainages outside of the marked area.

When construction is complete, temporarily disturbed areas would be restored to pre-Project conditions and revegetated to minimize erosion and sedimentation. Removal of Mt. Shasta Substation would not include alteration of existing drainage patterns, and the wetlands adjacent to the Project would not be permanently altered or impacted as a result of the Project. No substantial erosion or siltation as a result of drainage alteration would be expected on- or off-site, and therefore impacts resulting from erosion and siltation on- or off-site would be less than significant.

- d) **Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

**Less than Significant Impact.** Substantial alteration of streams or rivers or a substantial increase of surface runoff would not occur during construction or operation of the Project, including the removal of Mt. Shasta Substation. Access roads would avoid crossing streams and drainages, if feasible. If such crossings could not be avoided, temporary crossings, such as temporary road platforms or geomats, would be installed to minimize impacts. When construction is complete, all temporary crossings would be removed and disturbed areas would be restored to pre-Project conditions.

Some vegetation removal and soil disturbance would occur during clearing of the Lassen Substation site, staging area, access roads, and ROW, resulting in the potential for increased stormwater runoff that could lead to flooding. However, implementation of BMPs as described in

the SWPPP would minimize the potential for surface runoff and reduce the potential for on- or off-site flooding to a less than significant level.

e) **Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

**Less than Significant Impact.** The Project would result in a minor, temporary increase of surface runoff as a result of ground clearance for construction of the new Lassen Substation; however, the access road and the substation site would be located mostly in open space and in a rural residential area that does not have stormwater drainage systems. Stormwater runoff from the proposed substation site would drain south into an existing vegetated ditch on the east side of Old Stage Road, and runoff from work areas around pole structures would be contained to the fields in which they are located. Implementation of basic Project construction BMPs as outlined in the Project SWPPP (refer to APM WQ-1) would minimize potential impacts associated with stormwater drainage capacity to a less than significant level.

Removal of the Mt. Shasta Substation would not result in stormwater runoff above existing levels. The existing Mt. Shasta Substation concrete foundation and gravel would remain after removal of the substation. After construction of the Project is completed, stormwater runoff at the Mt. Shasta Substation site would essentially remain the same due to similar impervious surfaces remaining at the site. Impacts from increased stormwater levels resulting from construction and operation of Lassen Substation and removal of the Mt. Shasta Substation would be less than significant.

f) **Otherwise substantially degrade water quality?**

**Construction Impacts**

**Less than Significant Impact.** The proposed Project would not introduce any pollutants that would substantially degrade water quality (e.g., biostimulatory substances, toxins, or chemical constituents), nor would the Project cause an increase in factors such as temperature, pH, or salinity that would degrade water quality. The potential for substantially degrading water quality as a result of Project construction, including removal of the Mt. Shasta Substation, would be minimized with the implementation of BMPs associated with the SWPPP (refer to APM WQ-1), and impacts would be less than significant.

**Operation Impacts**

**Less than Significant Impact.** Water quality, including groundwater, could be degraded by accidental spills from oil-filled electrical equipment (i.e., circuit breakers, transformers, regulators, and capacitors) and storage facilities at the proposed Lassen Substation. As part of the Project design, a SPCC Plan would be prepared and would include engineered and operational methods for preventing, containing, and controlling potential releases and provisions for a quick and safe cleanup (refer to APM HAZ-3). In general, the proposed Lassen Substation site would be surfaced with gravel to reduce the migration of oil spills, and additional engineered methods (e.g., concrete berms, Petro-Barriers) would prevent any spills from leaving the new substation site. The proposed substation would also be gated with chain link fencing to prevent access to equipment by unauthorized persons. The plan would be certified by a professional engineer and a complete copy would be maintained on-site. With implementation of the SPCC Plan for operation of the proposed substation, impacts to water quality from oil-related spills would be less than significant.

**g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

**No Impact.** The Project does not involve construction of houses; therefore, no impact would occur.

**h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?**

**No Impact.** No Project components are located within a 100-year floodplain; therefore, no impact would occur.

**i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?**

**Less than Significant Impact.** The Project would not be located within a 100-year floodplain, nor would it be located near any waterbodies that would pose a significant risk of flooding, including flooding as the result of a dam or levee failure. The nearest waterbodies are Big Springs Creek and Cold Creek, located approximately 0.75 mile north and 0.25 mile east of the proposed substation, respectively. Big Springs Creek has its source from a spring located in Mt. Shasta City Park, 1.6 miles north of the proposed substation site. Big Springs Creek flows south into the Mt. Shasta Fish Hatchery, and is the sole source of water for hatchery operations. Water leaving the hatchery becomes Cold Creek, located approximately 0.5-mile northwest of the proposed Project, and flows south into Lake Siskiyou. The nearest dam to the Project site is Box Canyon Dam, approximately 1.8 miles south (downstream) of the Project. Box Canyon Dam is located on the eastern side of Lake Siskiyou, and empties to the east into the Sacramento River.

Big Springs Creek does not have an associated 100-year floodplain. Cold Creek does not have an associated 100-year floodplain designated until it reaches the Lake Siskiyou outlet, approximately one mile south of the proposed Project. Box Canyon Dam is nearly two miles to the south of the proposed Project and, in the event of catastrophic failure, would release water from Lake Siskiyou southeast into the Sacramento River, away from the Project area. There are no levees within the Project area. Potential for the Project to pose significant risk of loss, injury, or death resulting from flooding is less than significant.

**j) Expose people to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow?**

**Less than Significant Impact.** The Project is not located near a large body of water, and thus would not cause inundation by seiche or tsunami; therefore, the Project would not result in impacts due to inundation by seiche or tsunami. While the Project area may be subject to mudflow hazards resulting from seismic activity or landslide, the Project is unlikely to induce a mudflow event at a level to cause destruction or inundation of buildings or structures. The potential impact resulting from mudflow is less than significant.

Landslides and unstable areas are discussed in greater detail within Section 4.7, Geology and Geohazards.

## 4.10 Land Use and Planning

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Physically divide an established community?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

### 4.10.1 Methodology

The land use issues for the proposed Project were evaluated through a review of recent aerial photography, and through an extensive review of the Siskiyou County General Plan and the City of Mt. Shasta General Plan goals, policies, and ordinances, as well as associated agency maps, which are referenced throughout this section. In addition, local agencies were contacted to verify land use information and to solicit further information. Source documents used for reference purposes are cited at the end of this section.

### 4.10.2 Environmental Setting

#### Regional

The proposed Project is located in north-central California, within unincorporated Siskiyou County and the City of Mt. Shasta. The landscape of Siskiyou County is geographically diverse, ranging from predominantly mountainous areas to gently rolling hills and valleys. As a result of the County's unique topographic, geographic, and climatic conditions, a wide range of local land uses exist, and the economy of the Mt. Shasta/Siskiyou County area depends most heavily on recreation, travel, agriculture, and timber. Woodlands and open space account for a majority of the acreage in the County, as reflected in Table 4.10-1.

**TABLE 4.10-1 SISKIYOU COUNTY LAND USE**

TYPE OF USE	PERCENT OF TOTAL
Agriculture (Cropland and Pasture)	12.1
Dry Grass Land	11.2
Barren and Sage	19.3
Woodlands	55.3
Water Bodies, Marshland	0.8
Urban (Settlement areas including roadways and industry)	1.3

\* Includes incorporated and unincorporated county, excluding land in public ownership.  
Source: Siskiyou County 1980.

Private woodland properties occupy an estimated 55.3 percent of the County's area, accounting for the largest individual land use category (see Table 4.10-1). Substantial portions of the County are forested, including mixed conifer forests and oak woodlands from within the Siskiyou and Cascade Ranges.

Commercial timber stands include: ponderosa pine, sugar pine, western white pine, Jeffrey pine, Douglas-fir, white fir, red fir, incense cedar, mountain hemlock Brewer spruce, lodgepole pine and knobcone pine. In 2003, Siskiyou County ranked second among the State's counties in timber volume (million board feet), total agricultural value (including timber), timber value, and timber percentage of total agricultural value.

## **Local**

The proposed Project is located approximately 0.2 mile west of the I-5 corridor. The proposed substation site consists of two parcels (APN 036-220-280 and APN 036-220-170) comprising 4.5 acres in unincorporated Siskiyou County/City of Mt. Shasta sphere of influence. The site is located in a rural residential area composed of residences and assorted outbuildings, undeveloped land, and the existing Mt. Shasta Substation.

Assessor Parcel Number 036-220-280 contains a two-story wood-framed home with an attached three-car garage (corrugated metal structure with concrete slab foundation), a wood-framed well shed, an empty corrugated metal shed, an empty wood-framed storage shed, and an empty wood-framed chicken coop. Water is provided by an on-site well, and the residence is served by an on-site septic system and leach line. Electrical transformers are mounted on wood transmission poles on the west side of the property and along the gravel driveway.

Assessor Parcel APN 036-220-170 contains a single-story mobile home, an empty wood-framed well shed, and an empty wood-framed storage shed. Water is provided by an on-site well and, while the residence was formerly connected to an on-site septic system, it is now connected to the public sewer system. The nearest rural residences to the proposed substation site are located approximately 350 feet to the south and 450 feet to the southeast.

The existing 69 kV transmission line is located on undeveloped land within unincorporated Siskiyou County and near the City of Mt. Shasta. The distribution lines are located unincorporated Siskiyou County and extend into the City of Mt. Shasta. The City stretches approximately 3.5 miles from north to south and averages a little over one mile from east to west. The city limits contain approximately 3.74 square miles, and include a variety of land uses. The largest of these land uses is residential, which occupies approximately 32 percent of the land within the City. Land use in the Project vicinity is generally characterized by a mix of rural residences, pastures, wetlands, commercial businesses, and other various land uses.

## **Regulatory Framework**

### **Federal**

No federal regulations were identified that would be applicable to land use and planning for the proposed Project.

### **State**

The CPUC has sole and exclusive jurisdiction over the siting and design of the proposed Project, because the CPUC regulates and authorizes the construction of investor-owned public utility (IOU) facilities. Although such projects are exempt from local land use and zoning regulations and

permitting, GO-131-D, Section III.C requires “the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits” (CPUC 2010). Nondiscretionary local permits include permits that would not require approval from a local decision-making body such as a planning commission or city council. PacifiCorp considered local and State land use plans and policies, and local land use priorities and concerns.

## **Local**

### ***Siskiyou County General Plan***

The Siskiyou County General Plan is the County’s long-range planning document and comprises eleven elements: land use, conservation, circulation, housing, open space, safety, noise, energy, geothermal, scenic highway, and seismic. The General Plan Land Use Element was adopted in 1980 and the Land Use Policies were updated in 1997; the Energy Element was last adopted in 1993. The 2014 Housing Element was adopted in August 2014.

#### **Land Use Element**

The General Plan Land Use Element does not contain mapping for specific land use designations. Rather than delineating future land use patterns on a single general plan land use map, the county uses a series of overlay maps to identify development constraint areas. In doing so, the county directs future development toward areas where critical natural resources will be avoided and, consequently, the least affected. Therefore, the location, distribution, and concentration of land uses in an area typically depend on the presence or absence of natural resources at that location. According to the Land Use Element of the Siskiyou County General Plan, the proposed Project would be within the following mapped resource overlay areas: Wildlife Hazard, Woodland Productivity, Erosion Hazard, Prime Agricultural Soils, and Water Quality (see Table 4.10-2).

The following are the applicable policies established for development within those mapped resource areas:

#### **Map 10. Wildfire Hazard**

*Policy 30.* All development proposed within a wildfire hazard area shall be designed to provide safe ingress, egress, and have an adequate water supply for fire suppression purposes in accordance with the degree of wildfire hazard.

#### **Map 11. Woodland Productivity**

*Policy 31.* The minimum parcel size shall be one acre on 0–15% slope, and five acres on 16–29% slope.

*Policy 32.* Single family residential, light commercial, light industrial, open space, nonorganizational in nature recreational uses, commercial/recreational uses, and public or quasi public uses only may be permitted. The permitted uses will not create erosion or sedimentation problems.

*Policy 33.* All land uses and densities shall be designed so as not to destroy timber productivity on large parcels of high suitability woodland soil (Class I and II).

## **Map 2: Erosion Hazard**

*Policy 7.* Specific mitigation measures will be provided that lessen soil erosion, including contour grading, channelization, revegetation of disturbed slopes and soils, and project timing (where feasible) to less the effect of seasonal factors (rainfall and wind).

## **Map 12: Prime Agricultural Soils**

*Policy 34.* All Class I, II and III soils, that become Class III under irrigation, with the exception of Class III soils determined to be non-irrigable, are defined as prime agricultural land.

*Policy 35.* The minimum parcel size on prime agricultural land shall be 40 acres.

The permitted density will not create erosion or sedimentation problems.

*Policy 35.1* Within the Tulelake Basin, a one-time land division can be considered containing an existing dwelling and 2.5 acres of land, provided the landowner has resided continuously within the residence since August 12, 1980, on property zoned Prime Agricultural (AG-1). This policy will allow the consideration of the division, subject to the rezoning on the proposed "homestead parcel" from Prime Agricultural to Rural Residential, 2.5 acre minimum parcel size (R-R-B-21/2). The balance of the farm will be required to meet the 40 acre Prime Agricultural minimum parcel size requirement as defined in Policy 35. This policy does not apply to land subject to a Williamson Act Contract. (General Plan Amendment).

*Policy 35a.* Exceptions to the agricultural density requirement can only be made when the division of land is necessary to allow private financing of a land use, excluding residential housing, which is strictly agricultural in nature and necessary for the operation of the farming unit. The parcel created for private financing purposes must only be as large as necessary to construct the agricultural use and still meet minimum health and safety requirements. Written documentation from the applicable financing agency or company that the land division is necessary for financing is required as proof until the proposed division of land is necessary. (General Plan Amendment)

To conform to General Plan requirements, the property must be zoned PD, with the only allowable use the specific use for which the parcel is being created.

*Policy 36.* In commercial agricultural areas mapped as prime agricultural land but proven not to be prime agricultural land or land clearly committed to urbanization, but not within a city or service district sphere of influence, the minimum parcel size shall be 10 to 12 acres, depending on distance from major agricultural areas.

The permitted density will not create erosion or sedimentation problems.

A minimum parcel size of 20 acres is required in areas that are adjacent to or in close proximity to major commercial agricultural operations.

The intent of this policy is to allow a higher density on land that is not capable of being productive for agricultural, and at the same time regaining a residential density in the major agricultural areas of the county that is compatible with agricultural interests.

*Policy 36.1.* Except in Scott Valley, Prime Agricultural policies shall not apply to lands within one-quarter mile of an incorporated in the following circumstances:

- a. The property is contiguous to lands developed as heavy commercial or heavy industrial.
- b. The land is not within a sphere of influence or not presently eligible for such designation or annexation.
- c. The land is proposed for immediate development as heavy commercial or heavy industrial.
- d. The land will be zoned Planned Development to authorize the requested specific land use.
- e. The landowner will enter into a Development Agreement with the County to ensure the prompt development as requested.
- f. This policy shall not apply to lands under a Williamson Act Contract.

*Policy 37.* Only agricultural uses are permitted on prime agricultural land.

*Policy 38.* In commercial agricultural areas mapped as prime agricultural land but proven not to be prime agricultural land, single-family residential, light commercial, light industrial, open space, non-profit and non-organizational in nature recreational uses, commercial/recreational uses and public or quasi-public uses may be permitted.

The permitted uses will not create erosion or sedimentation problems.

*Policy 39.* Proof that mapped prime agricultural soils are in fact not prime can only be done by providing the following information:

- a. Submission of a soils test prepared by a California Certified Soil Scientist.
- b. Submission of well logs that specifically demonstrate there is not enough water available for irrigation purposes.
- c. A letter from the applicable irrigation district stating that they will not and cannot provide water.
- d. Any other factual, documented information that the area is not and has not been capable of supplying enough water for irrigation.
- e. If an on-site field inspection by the Planning Department reveals that the land is not prime agricultural, the data itemized in *a*, *b*, *c*, and *d* above may not be required; i.e., obvious mapping errors.
- f. Submission of past financial records or statements that the agricultural operation is not economically feasible are not in any way considered to be adequate proof that the land is not prime.

*Policy 40.* All development proposals within an irrigation district shall conform to all rules, regulations, and policies of the applicable irrigation district. The intent of this policy is not to permit district regulation of land use or density - it is intended to prohibit any interference of the district's functions, such as keeping checks and irrigation ditches free and clear of any disturbance.

## **Map 6: Water Quality**

*Policy 17.* Known poor quality surface and groundwater sources shall be identified and reported to the Planning Department for future development reference.

*Policy 18.* Because of the incidence of heavy metals, including arsenic, and other known non-potable water sources throughout Siskiyou County, random sampling should be undertaken to monitor the acceptability of water supplies for development purposes.

*Policy 19.* The minimum parcel size shall be one acre on zero to 15 percent slope, and five acres on 16 to 29 percent slope.

The permitted density will not create erosion or sedimentation problems.

*Policy 20.* Single-family residential, light industrial, light commercial, open space, non-profit and non-organizational in nature recreational uses, commercial/recreational uses, and public or quasi-public uses only may be permitted.

The permitted uses will not create erosion or sedimentation problems.

### **Composite Overall Policies (Applicable to the Proposed Project)**

*Policy 41.3 (b).* All light commercial, light industrial, multiple family residential, and commercial/recreational, public and quasi-public uses must provide or have direct access to a public road capable of accommodating the traffic that could be generated from the proposed use.

*Policy 41.3 (e).* All proposed uses of the land shall be clearly compatible with the surrounding and planned uses of the area.

*Policy 41.3 (f).* All proposed uses of the land may only be allowed if they clearly will not be disruptive or destroy the intent of protecting each mapped resource.

*Policy 41.4.* Policy conflict with city or special district General Plan - in areas within a city's or special district's sphere of influence, the adopted General Plan of the applicable city or special district shall be considered in relation to the County's General Plan Policies, except in cases where the applicable city's General Plan clearly does away with the intent of any applicable resource map.

*Policy 41.5.* All development will be designed so that every proposed use and every individual parcel of land created is a buildable site, and will not create erosion, runoff, access, or fire hazard or any other resource or environmental related problems.

*Policy 41.6.* There shall be a demonstration to the satisfaction of the Siskiyou County Health Department and/or the California Regional Water Quality Control Board that sewage disposal from all proposed development will not contaminate ground water.

*Policy 41.7.* Evidence of water quality and quantity acceptable to the Siskiyou County Health Department must be submitted prior to development approval.

*Policy 41.8.* All proposed development shall be accompanied by evidence acceptable to the Siskiyou County Health Department as to the adequacy of on-site sewage disposal or the ability to connect into an existing city or existing Community Services District with adequate capacity to accommodate the proposed development. In these cases the minimum parcel sizes and uses of the

land permitted for all development will be the maximum density and lands uses permitted that will meet minimum water quality and quantity requirements, and the requirements of the county's floodplain management ordinance.

*Policy 41.9.* Buildable, safe access must exist to all proposed uses of land. The access must also be adequate to accommodate the immediate and cumulative traffic impacts of the proposed development.

*Policy 41.12.* All significant historic and prehistoric places and features when identified shall be preserved and protected in accordance with accepted professional practices.

*Policy 41.13.* All rare and endangered plant species as identified and recognized by state and federal government shall be preserved and protected in accordance with accepted professional practices.

As long as a project does not violate these policies, it will be deemed consistent with the County's General Plan. Goals and policies relating to transmission lines were not identified in the Land Use Element. The Energy Element (1993), however, evaluated Siskiyou County energy uses and opportunities and established an energy strategy to meet the County's future needs. It also established goals and policies to carry out the strategy. Relevant goals and policies include the following:

#### Energy Element

The Siskiyou County General Plan Energy Element states “[a]lthough many state and federal agencies maintain that their legal authorities preempt local permitting, most California counties continue to ask for and receive use permit applications from transmission facility developers.” The Energy Element contains the following goal and policies that would be applicable to the proposed Project:

*Goal – Energy Facilities:* Thorough and expeditious evaluation of energy facility proposals; siting of such facilities in a timely, orderly, and environmentally-sound manner; and assurance of the compatible and environmentally-sound operation, maintenance, and eventual abandonment of such facilities.

*Policy 31 –* Energy facilities shall only be approved if in compliance with all applicable provisions of the General Plan and Zoning Ordinance; and construction shall start only after all applicable federal, state, and local permits have been obtained and permit conditions satisfied.

*Policy 32 –* In the absence of compelling or contravening considerations, energy facilities should not be sited in sensitive natural resource areas, including: unstable geologic or soil areas; floodplains; wetlands; habitat of fish or wildlife species of rare, threatened, endangered, or special concern status; known paleontological, archeological, ethnographic, or historical sites; or designated scenic areas. If siting in such areas is unavoidable, it shall be limited to the smallest possible portion of the energy facility in question, and shall be mitigated in accordance with CEQA.

*Policy 33 –* Wherever possible, increased demand for energy transmission shall be accommodated with existing transmission facilities. Where new capacity is necessary, priority shall be given to upgrading or reconstruction of existing facilities, followed by new construction along existing facilities, followed by new construction along existing transmission or other utility corridors. Any new transmission facilities shall be sited so as to minimize interference with surrounding land-uses, and in ways that minimize their visual impacts.

***Siskiyou County Zoning***

Zoning districts are used to regulate how the land can be used in Siskiyou County. The proposed Project would traverse parcels with Multiple-Family Residential (RES-4), Neighborhood Commercial (C-U), Rural Residential Agricultural (R-R), Non-Prime Agricultural (AG-2), and Planned Development (P-D) zoning designations (see Table 4.10-2).

The proposed Project (substation component) is located within the Rural Residential Agricultural (R-R) zoning district, as defined by Chapter 10.6 of the Siskiyou County Municipal Code. The purpose of this zoning district is to “provide an area where rural residential uses can be compatibly mixed with commercial agricultural activities” (§ I, Ord. 86-2, eff. February 27, 1986). The substation component of the proposed Project would be considered a compatible use in this district with the approval and issuance of a Conditional Use Permit, as identified under Section 10-6.4803 (a) of the municipal code (personal communication with Brett Walker, Siskiyou County Planner, December 2, 2014).

Zoning Districts within the Project area do not specifically address transmission or distribution lines. The transmission and distribution line upgrade would not require a use permit or a conditional use permit (personal communication with Rowland Hickel, Siskiyou County Planner, October 17, 2011).

**TABLE 4.10-2 GENERAL PLAN AND ZONING DESIGNATIONS FOR THE PROPOSED PROJECT – SISKIYOU COUNTY**

PROJECT COMPONENT	ASSESSOR PARCEL NUMBER (APN)	GENERAL PLAN DESIGNATION	SISKIYOU COUNTY ZONING DESIGNATION
New Substation	036-220-280	Prime Agricultural Soils, Wildfire Hazard, Woodland Productivity	R-R-B-5
New Substation	036-220-170	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Water Quality, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-190-220	Wildfire Hazard, Woodland Productivity	RES-4, C-U
Transmission Line Upgrade	036-220-110	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-120	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-140	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-150	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-280	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-170	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-190	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5

PROJECT COMPONENT	ASSESSOR PARCEL NUMBER (APN)	GENERAL PLAN DESIGNATION	SISKIYOU COUNTY ZONING DESIGNATION
Transmission Line Upgrade	036-220-200	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-220	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-230	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-5
Transmission Line Upgrade	036-220-260	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	AG-2
Transmission Line Upgrade	036-220-370	Erosion Hazard, Wildfire Hazard, Prime Agricultural Soils, Woodland Productivity	R-R-B-1
Transmission Line Upgrade	036-460-121	Erosion Hazard, Wildfire Hazard, Woodland Productivity	P-D (R-R)

***City of Mt. Shasta General Plan***

The Project is located within an area historically known as the Strawberry Valley. As illustrated on Figure 1-1, Project Area, a portion of the Project's transmission and distribution line upgrade would occur within the City of Mt. Shasta (refer to Figure 3-2). The Project is also located within the City of Mt. Shasta's Sphere of Influence (SOI). The SOI establishes the ultimate service limits of the City and includes unincorporated land where the types of land uses, development patterns, and appearance may have an effect on the City's abilities to provide services, or are otherwise of concern or interest to the City (Mt. Shasta 2007). However, because the City may express its expectations and concerns regarding development on land within its Planning Area, Project consistency with both County and City general plans were considered in this land use impact analysis.

The current City of Mt. Shasta General Plan was adopted in 2007, and reflects the community's vision for future development through the year 2025. The general plan includes the mandatory General Plan elements: Land Use, Circulation, Safety, Noise, Housing, and a combined Open Space/Conservation Element. The City of Mt. Shasta Planning Staff prepared a Draft Housing Element for the 2014-2019 planning period in August 2014.

The City of Mt. Shasta General Plan Land Use Map classifies the Project site (transmission line upgrade component) as CC (Commercial Center). The CC land use designation is intended for a wide range of commercial, office, retail, service, and entertainment uses. The Mt. Shasta General Plan Land Use Map (Planning Map) designates the Project site (substation component and transmission line upgrade) as Low-Density Residential and Rural Residential. Low-Density Residential development consists of single-family housing that is located on larger parcels. According to the General Plan, "An issue related to Low-Density Residential development is the case that most of this type of development outside the City utilizes septic tanks and individual wells." Land immediately east of the proposed Project is under the jurisdiction of the City of Mt. Shasta and has been designated CC, EC (Employment Center) and RL (Resource Land).

### Circulation Element

The Circulation Element contains goals and policies that address streets and highways, public transit, rail and air transportation, non-motorized transportation, and public utilities. The following goal and policy that would be applicable to the proposed Project:

*Goal CI-9:* Ensure adequate utilities to meet community needs.

*Policy CI-9.1:* Encourage participation of public utilities in the project review process.

#### Implementation Measures:

*CI-9.1(a):* Provide copies of development proposals for the review and comment of public utilities about the capacity to serve the project.

*CI-9.1(b):* Support efforts by utilities to upgrade and improve service to the Mt. Shasta area.

### *City of Mt. Shasta Zoning*

A component of the proposed Project (transmission line upgrade) is under the jurisdiction of the City of Mt. Shasta and is zoned U (Unclassified). The Unclassified (U) zoning district is intended to provide opportunities for development proposals with conditional use permits, consistent with the applicable General Plan land use designation, in areas that have unique development constraints. The U zone is consistent with all land use classifications of the General Plan.

The Unclassified Zoning District does not specifically address transmission or distribution lines. The transmission and distribution line upgrade would not require a use permit or a conditional use permit (personal communication with Keith McKinley, City of Mt. Shasta Planner, October 17, 2011).

## **4.10.3 Environmental Impacts**

CPUC GO-131-D, Section XIV.B, states: "Local jurisdictions acting pursuant to local authority are preempted from regulating electric power line projects, distribution lines, substations, or electric facilities constructed by public utilities subject to the Commission's jurisdiction. However in locating such projects, the public utilities shall consult with local agencies regarding land use matters" (CPUC 2010). Consequently, public utilities are directed to consider local regulations and consult with local agencies, but the County and city regulations are not applicable, as the County and cities do not have jurisdiction over the proposed Project.

### **Impact Analysis**

Would the Project:

#### **a) Physically divide an established community?**

**No Impact.** Construction and operation of the proposed Project would not physically divide an existing community. The proposed substation site is located immediately west of Mt. Shasta City limits and within Mt. Shasta's Sphere of Influence, the transmission line extension (300 feet) and transmission line replacement segment (1.5 miles) would cross generally undeveloped open space. The transmission line replacement segment would be within existing PacifiCorp ROW. The distribution line upgrade would occur within PacifiCorp easements. The proposed Project would be located in a predominantly rural area and would be consistent with the existing community. The Project would not create a substantial barrier that would alter or shift the existing community in a manner that would divide the area. Thus, it would not physically divide an established community, and no impact would occur.

**b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

**No Impact.** To determine the proposed Project's consistency with applicable plans and policies, the land use consistency analysis is provided above.

In accordance with Siskiyou County Code, Section 10-6.4803(a), subject to obtaining a use permit, public utility uses are permitted in a R-R District. A review of the Siskiyou County General Plan identifies the Project site would be located within a Wildlife Hazard Area, Woodland Productivity Area, Erosion Hazard Area, Prime Agricultural Soils Area, and Water Quality Area. Use Permit approval would ensure that the Project site is consistent with the Siskiyou County Zoning Ordinance.

Zoning districts within Siskiyou County and the City of Mt. Shasta do not specifically address transmission or distribution lines. The transmission and distribution line upgrade would not require a use permit or a conditional use permit (personal communication with Rowland Hickel, Siskiyou County Planner, and Keith McKinley, City of Mt. Shasta Planner, October 17, 2011).

**c) Conflict with any applicable habitat conservation plan or natural community conservation plan?**

**Less than Significant.** The Proposed Lassen Substation would not be located within the boundaries of an adopted a HCP, NCCP, or other approved local, regional, or state habitat conservation plan for the Project area or its vicinity.

A portion of the transmission line upgrade, beginning midway between Pole 12/48 and 13/48 and continuing north to Hatchery Lane, consists of natural and created wetlands, and non-wetland natural areas that were set aside as wetland mitigation (Theiss 1990). In 2000, this property was declared the Morgan-Merrill Wildlife Preserve (County of Siskiyou 2000) as part of that mitigation plan. The purpose of the wildlife preserve is to ensure that the protected area would be retained in its natural wetland and open space condition in perpetuity.

The Project is consistent with State and local applicable standards and guidelines. Additionally, implementation of Project APM's would ensure Project related construction and operation impacts would be less than significant. Moreover, PacifiCorp would conduct all activities associated with the construction and operation of the substation and transmission line within the authorized limits of the ROW and in strict conformity with measures identified to reduce potential impacts of the Project. Replacement of the poles would occur within the existing ROW.

PacifiCorp design standards require a ROW that is 50 feet wide for a 115 kV transmission line. The existing ROW for the 69 kV transmission line varies from 50 feet to 75 feet wide; therefore, the new 115 kV line into the proposed substation would not require new easements for the pole upgrade portion of the Project. The distribution line to be removed would occur within PacifiCorp existing easement and would not result in permanent impacts. Therefore, the proposed Project would not conflict with the Morgan-Merrill Wildlife Preserve and impacts would be less than significant.

## 4.11 Mineral Resources

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.11.1 Methodology

Existing conditions and potential mineral resources were evaluated from review of available published literature, such as geologic reports and geologic maps, review of large-scale topographic maps, and review of orthophoto quadrangles that include the Project area. Descriptions of mineral resources in the Project area were obtained from published reports and mapping by the CGS (Kohler 2006); geologic units in the Project area were derived from published mapping by Wagner and Saucedo (1987) and Crandell (1989). Soil descriptions were obtained from mapping by the U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Siskiyou County – Central Part (Newlun 1983).

### 4.11.2 Environmental Setting

The Project is located along the western boundary of the Cascade Range geomorphic province of California. The Cascade Range extends from south of Mt. Lassen in Shasta County, northward through the Project area, continuing north into Oregon, Washington state and southern British Columbia. The Cascade Range consists of a north to west-northwest-trending mountain chain dominated by regularly spaced, large volcanic eruptive centers. In northern California and in the vicinity of the Project area, the Cascade Range is bounded on the west by the Klamath Mountains geomorphic province and on the east by the Modoc Plateau geomorphic province. The division between the Cascade Ranges and the Modoc Plateau is indistinct, since the characteristic volcanism associated with each province occurs locally in the other. On the west side of the Cascade province, it is likely that rocks of the Cascade Ranges lap onto or overlie Klamath Mountain province rocks (Wagner and Saucedo 1987).

#### Mineral Resources

Mineral resources present in the Cascade Province of northern California and Siskiyou County are described by Gay (1966) and Harden (1998). Mineral resources include metallic minerals such as gold, mercury, and uranium. Non-metallic minerals consist of sand and gravel, volcanic cinders, optical grade calcite, clay, coal, stone, diatomite, limestone, obsidian, perlite, and pumice. Mining of volcanic cinders is reported east of Weed and outside the Project area by Gay (1966).

The CGS (2014) has not prepared any reports that designate Mineral Resource Zones to be protected in Siskiyou County. There were no documents prepared by the California Geological Survey that describe or map mineral resources in Siskiyou County.

Only one surface mining operation occurs in the Project area: a sand and gravel surface mine is located approximately 2.5 miles northwest of the Project, along I-5.

#### 4.11.3 Environmental Impacts

Would the Project:

- a) **Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

**No Impact.** There are no designated Mineral Resource Zones and no known mineral resources within the proposed substation site or within the existing ROW; therefore, no impacts would occur and no mitigation would be required.

- b) **Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

**No Impact.** Neither the Siskiyou County General Plan nor the City of Mt. Shasta General plan designate mineral resource recovery sites on the proposed substation site or within the existing ROW; therefore, no impacts would occur and no mitigation would be required.

## 4.12 Noise

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.12.1 Methodology

Analysis of potential noise impacts was based on Project specifications, the use of existing acoustical literature, and a review of local adopted noise standards and guidelines that directly regulate noise generated by electrical substation facilities and electrical transmission lines.

### 4.12.2 Environmental Setting

Noise is generally defined as unwanted sound. Sound is any pressure variation in the air that can be detected by the human ear. Pressure variations occurring at a minimum frequency of at least 20 times per second are audible to the human ear, and are heard as sound. Noise impacts imposed on the human environment can range from inconvenient levels that induce undue stress and annoyance (i.e., interference with activities such as sleep and speech) to more severe levels that result in adverse health effects (i.e., loss of hearing and psychological damage).

The decibel (dB) is the basic unit of measurement for sound. Direct measurement of sound in terms of pressure would involve a large assortment of awkward numbers. Thus, a logarithmic scale known as the decibel system was developed to provide a more simplified relationship between the intensity of sound and its perceived loudness to the human ear. Under the decibel system, 20 micropascals is equal to 0 dB, and sound increases or decreases exponentially with each decibel of change (i.e., a 10 dB level would be ten times more intense than 1 dB, and a 20 dB level would be one hundred times more intense). Three noise rating scales (denoted as "A," "B," "C"), which are classified based on

sound level frequencies, indicate human sensitivity to audible sound. In general, noise levels that are considered acceptable or unacceptable are associated with various environments. For example, lower noise thresholds are typically established for rural or suburban areas, whereas higher thresholds are set for industrial and commercial zones. Ambient noise levels occurring in urban areas during the night are typically seven decibels lower than the corresponding average noise levels that occur during the daytime. Rural areas located far from roads and other human activity experience considerable less day-to-night difference in ambient noise levels. Noise levels that exceed 45 dBA at night could deprive local residents of sleep or interfere with their normal patterns of sleep (USEPA 1974).

The proposed Project area is located in primarily a rural setting containing residences, a mobile home park, a hotel, senior apartment community, undeveloped land, I-5, a power substation, and commercial buildings. Table 4.12-1 provides a list of noise measurement and acoustical terminology that is utilized throughout this section. Table 4.12-2 provides the ranges of common sounds that people are likely to experience within the Project area.

**TABLE 4.12-1 NOISE MEASUREMENT AND ACOUSTICAL TERMINOLOGY**

TERM	DEFINITION
Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term <i>ambient</i> is used to describe an existing or pre-project condition, such as the setting in an environmental noise study.
Attenuation	The reduction of noise.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound. A <i>Bell</i> is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by a factor of three and nighttime hours (10 p.m. - 7:00 a.m.) weighted by a factor of 10 prior to averaging.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz.
$L_{dn}$	The equivalent sound level over a 24-hour period with 10 dBA penalty applied to the equivalent sound level during the nighttime hours of 10:00 p.m. to 7:00 a.m.
$L_{eq}$	The energy averaged A-weighted sound level over a specific measurement period.
$L_{max}$	The maximum sound level measured during an ambient noise test as determined from the statistical database.
Loudness	A subjective term for the sensation of the magnitude of sound.
Noise	Unwanted sound.

Source: City of Mt. Shasta 2008.

**TABLE 4.12-2 TYPICAL RANGES OF COMMON SOUNDS**

SOURCES OF NOISE	NOISE LEVEL RANGES (DBA)
Threshold of Pain	130 – 140
Pneumatic Chipper	120 – 130
Motorcycle	80 – 110
Emergency Diesel Power Generator	55 – 75
Power lawnmower	80 – 95
Automobile (at 50 Feet)	60 – 90
Conversational Speech	60 – 70
Refrigerator	45 – 70
Living Room (Suburban Area)	40 – 50
Bedroom at Night	20 – 30
Threshold of Hearing	0 – 10

Source: USEPA 1974.

Human perception of loudness is predictable and can be estimated by weighting the frequency response of a sound level meter using the standardized “A-weighting” network. A strong correlation exists between A-weighted sound levels (expressed as dBA) and community responses to the annoying aspects of noise. Consequently, the A-weighted sound level has become the most common tool that is used for environmental noise assessment. Noise resulting from human activities, and the consequences of such noise, are generally represented by an A-weighted sound level monitored over a given time period ( $L_{eq}$ ) or by the average day-night noise levels ( $L_{dn}$ ).

### Radio Noise

Radio Interference (RI) occurs in the 535 to 1605 kHz frequency range, while Television Interference (TVI) occurs in the 54 to 88 MHz range. Collectively, RI and TVI are known as Radio Noise (RN). RN is measured in units of dB per microvolt per meter ( $dB\mu V/m$ ), and can result from both corona and gap discharges during foul weather conditions. Two potential sources of interference from the operation of a transmission line are corona and gap discharges. Corona discharge can arise when air surrounding a transmission line becomes ionized by the electrical field reaching a sufficiently high value at a particular point. Corona noise is typically associated with transmission lines operating at transmission line voltages above 200 kV and most significant in foul (typically rain) weather, when water droplets are often located on, or trickling off of, the conducting wires. Cable and satellite systems are not prone to corona. Gap discharges or “sparking” can result between pieces of the transmission line equipment, such as hardware, insulators, clamps, and brackets that are poorly fitted together. Gap discharges occur mostly during dry weather because dampness on the line tends to minimize resistance in the connection, allowing current to flow freely. Gap discharges are the primary cause of TVI, and tend to interfere with broadcasts in the UHF range (above 300 megahertz [MHz]).

### Existing Noise Sources

The proposed Project encompasses land uses consisting of rural, open space, residential, commercial, and other uses. The proposed Lassen Substation facility and transmission line are located in unincorporated Siskiyou County. The City of Mt. Shasta is located east of the proposed Lassen Substation site. The majority of the transmission line is located to the west of the City of Mt. Shasta;

however, approximately 1,200 feet of the transmission line upgrade is located within the City of Mt. Shasta. The area in the vicinity of the distribution line upgrades consist of residences, a senior apartment community, undeveloped land, I-5, medical facilities, and commercial buildings.

The primary contributor to the noise environment in the greater Project area is vehicle traffic along I-5 and other local roadways, as well as fixed noise sources.

#### Interstate 5

I-5 is located approximately 0.2 mile from the proposed Project, in an area populated by rural residences. City of Mt. Shasta General Plan Noise Element (Table 7-1) indicates the noise levels for traffic within the City's planning area, and is based on data from the California Department of Transportation (Caltrans) utilizing the Federal Highway Administration Traffic Noise Model. As indicated by Table 7-1, the measured  $L_{dn}$  noise level in 2006 ranged from 65 dBA at a distance of 464 feet from the I-5 to 60 dBA at a distance of 999 feet from I-5. The distribution lines cross I-5 in three locations: (1) approximately 170 feet south of Lassen Lane; (2) at Jessie Street; and (3) approximately 355 feet south of W. Lake Street.

#### **Sensitive Receptors**

Noise-sensitive land uses are generally defined as locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Noise-sensitive receptors include schools, residences, senior housing, hospitals, and businesses. Sources that generate excessive noise may result in the loss of local business or annoy residents living in the area.

Land uses in the vicinity of the proposed Substation consist of pastureland and open-space uses to the north, with rural residences to the south. Land uses in the vicinity of the transmission line (Line 2) consist primarily of rural residential uses, open space, and agricultural land. Land uses in vicinity of the distribution lines consist of rural/open space, residences, commercial uses, I-5, and medical facilities.

Most of the residences in the Project area are located in the City of Mt. Shasta; however, residences are scattered throughout the Project area. The nearest existing noise-sensitive receptors potentially impacted by the construction and operation of the proposed Project are the occupied residences.

Residential dwellings potentially impacted by installation of new poles and replacement of existing poles along the transmission line are located at various distances from the pole locations. The majority of the residential uses are located south of the existing and proposed substation sites; however, there are a few scattered residences north of the substation sites. These residences range in distance from the pole locations between approximately 70 feet and 580 feet. Sensitive noise receptors near the distribution line upgrade consist of residential uses including a senior community.

#### **Regulatory Framework**

##### Federal

The USEPA, Office of Noise Abatement and Control, was originally established to coordinate federal noise control activities. After inception, the USEPA's Office of Noise Abatement and Control issued the federal Noise Control Act of 1972, which established programs and guidelines to identify and address the effects of noise on public health and welfare and the environment. Administrators of the USEPA determined in 1981 that subjective issues such as noise would be better addressed at lower levels of government. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to state and local governments. However, noise control guidelines and regulations

contained in the rulings by the USEPA in prior years remain upheld by designated federal agencies, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies.

State

The State of California adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation.

*Vibration and Groundborne Noise Impact Regulations*

CEQA states that the potential for excessive groundborne noise and vibration levels must be analyzed; however, CEQA does not define the term “excessive” vibration. Numerous public and private organizations and governing bodies have provided guidelines to assist in the analysis of groundborne noise and vibration; however, federal, State, and local governments have yet to establish specific groundborne noise and vibration requirements. Additionally, there are no federal, State, or local vibration regulations or guidelines directly applicable to the proposed Project.

Local

*Siskiyou County General Plan*

Audible noise standards that are applicable to the proposed Project are described in the Noise Element of the Siskiyou County General Plan. Table 4.12-3 reflects the land use compatibility standards set by the County’s Noise Element for exterior community noise. Residential land uses are identified as the most sensitive land uses, with an established noise limit of 60 dBA. Noise limits for any new development sited within a residential area is limited to 60 to 65 dBA, with noise abatement features incorporated.

**TABLE 4.12-3      SISKIYOU COUNTY GENERAL PLAN NOISE ELEMENT: LAND USE COMPATIBILITY FOR EXTERIOR COMMUNITY NOISE**

LAND USE CATEGORY	NOISE RANGES (LDN*,DBA)			
	1	2	3	4
Passively Used Open Space (auditoriums, parks, etc.)	50	50-55	55-70	70
Residential, Motels, Hospitals, etc.	60	60-65	65-75	75
Office Buildings, Light Commercial, Heavy Commercial, etc.	65	65-70	70-75	75

Noise Range 1 – Acceptable land use, no noise abatement required.  
 Noise Range 2 – New construction or development, noise abatement features included.  
 Noise Range 3 – New construction or development, noise abatement only after detailed analysis of noise reduction requirements.  
 Noise Range 4 – New construction or development not allowed.  
 \*Day-night average sound level that is equal to the 24 hour A-weighted equivalent sound level with a 10 decibel penalty applied to nighttime levels.

While the proposed Project is under the jurisdiction of Siskiyou County, land located to the east is under the jurisdiction of the City of Mt. Shasta.

### *Siskiyou County Municipal Code*

Limitations and standards on noise are generally enforced through a noise ordinance or a jurisdiction's municipal code. There is no adopted Noise Ordinance for Siskiyou County; thus, limits on noise are not regulated by the Siskiyou County Municipal Code.

### *City of Mt. Shasta General Plan*

Although no noise standards are currently set by a Noise Ordinance in the City of Mt. Shasta, Policy NZ-1.1 (a) states the City's intent to "Enact a noise control ordinance."

The Mt. Shasta Noise Element (Table 7-5) establishes noise standards for new uses affected by non-transportation noise. Policy NZ-1.1 states that the "standards of Table 7-5 shall be applied to both new noise-sensitive land uses and new noise-generating uses, with the responsibility for noise attenuation placed on the new use."

## **4.12.3 Environmental Impacts**

Would the Project:

- a) **Would the project cause exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

**Less than Significant Impact.**

### Construction Impacts

Temporary demolition and construction-related noise would occur within rural agricultural and residential areas, but would be within acceptable levels of plans and ordinances. This noise would include demolition of the existing substation facility, site clearing, earth moving, erection of the new substation and transmission line poles, upgrades along the distribution lines, clipping in the conducting wires, and restoration of the ROW. As part of the proposed project, approximately 1,200 feet of underground cable would be installed to increase capacity of an existing underground line. As shown on Figure 3-2, this work would occur adjacent to an existing senior community. This portion of the project construction would progress quickly, and is expected to occur in this area for a short time period. Similarly, work at each pole location is only expected to occur at or near residences for no more than a few days over the anticipated six-month construction schedule. No construction activities would occur in proximity to existing residential uses except between the hours of 7 a.m. and 7 p.m., Monday through Friday, or 8 a.m. to 5 p.m. on Saturdays.

### Operation Impacts

During the Project's operational lifetime, noise generated by the new transformer would be comparable to noise generated by the transformer at the existing Mt. Shasta Substation. Based on the specifications of the proposed transformer (115x 69-12.5 kV, 15/20/25 MVA), it would generate an approximate noise level of 53 dBA at 50 feet and 33 dBA at 500 feet. Thus, transformer noise at the closest residences (345 feet and 450 feet from the proposed Project) would not exceed the County's specified maximum noise exposure levels due to stationary sources.

When compared to the existing 69 kV transmission line, the proposed transmission line would produce a negligible increase in noise level increase. Thus, operation of the Project's transmission line would not result in the generation of noise levels above 60 dBA, which is the Siskiyou County noise standard for the area. Therefore potential impacts from the operation of the transmission line would have a less than significant impact.

**b) Would the project cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

**Less than Significant Impact.**

Construction Impacts

Demolition of the existing Mt. Shasta Substation or construction of the Lassen Substation and associated transmission line, and distribution line upgrades (tamping of ground surfaces, drilling, and the passing of heavy trucks on uneven surfaces) may produce minor groundborne vibration in the immediate vicinity of the construction activity. Impacts from construction-related groundborne vibration, should they occur, would be intermittent and confined to the immediate area surrounding the activity.

Operation Impacts

Operation of the proposed Project would consist of routine maintenance activities and emergency repairs. These activities would be unlikely to produce groundborne vibration. Operation of transformers at the Lassen Substation could produce groundborne vibration; however, groundborne vibrations would be perceptible only in the immediate vicinity of the transformer pad, if at all.

**c) Would the project cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less Than Significant Impact.** The permanent noise sources that would occur with the proposed Project are limited to the transmission/distribution line segment (conductors and insulators) and transformer operation at the proposed Lassen Substation.

Transmission Line Operation

*Audible Noise*

A typical range of noise levels for the proposed transmission line (when operated at initial 69 kV) and planned 115kV would be negligible at the center of the line and at the edge of ROW because of the low electric field gradients from the transmission line even in rain conditions. When compared to the existing 69 kV transmission line, the proposed transmission line would not generate an increase in audible noise levels. Thus, operation of the Project's transmission line would not result in the generation of noise levels above 60 dBA, which is the Siskiyou County noise standard for the area. Therefore, potential impacts from the operation of the transmission line would be less than significant. No mitigation is necessary.

*Radio Noise*

For transmission lines with normal conductor spacings and ROW, a fair weather RI level of 40 dB $\mu$ V/m at a lateral distance of 100 feet from the outermost phase has been established as a

guideline for identifying a design criteria for an RN limit (Electric Power Research Institute Transmission Line reference Book, 200 kV and Above, Third Edition). RI levels from the Mt. Shasta Substation transmission line would be less than 20 dB $\mu$ V/m under fair weather conditions. This constitutes a less than significant impact, and no mitigation is required.

#### Substation Operation

During the Project's operational lifetime, the following sources of equipment have the potential to generate audible noise within the proposed substation: transformers, reactors, voltage regulators, circuit breakers, and other intermittent noise generators. Among these sources, transformers and reactors are the most likely to produce audible noise, usually in the form of a low-frequency humming sound. Sound generated by fans, pumps, and coolers can also contribute to this source, but typically blend in with the existing ambient noise levels. Electrical equipment within the substation is generally classified as point noise sources. For point sources, a 6 dBA reduction in noise is anticipated to occur for every doubling of the distance between the noise source and the point of measurement. This is comparable to a decrease of 20 dBA for every increase in distance from the source by a factor of ten.

The low humming noise generated from the operation of substation equipment at the proposed Project site would be mostly contained onsite and would not result in a permanent increase in ambient noise levels in the vicinity. Residences neighboring the proposed Project site are already exposed to facility noise associated with the operation of the existing Mt. Shasta Substation. Thus, the operation of a new substation at this location would not result in any appreciable increase to the existing average ambient noise levels.

As a result, the proposed Project would not cause a substantial permanent increase in ambient noise levels in the vicinity of the proposed Project above levels existing without the Project. Impacts would be less than significant.

**d) Would the project cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

#### **Less Than Significant Impact.**

#### Construction Impacts

Project construction noise would be generated by on- and off-site sources. On-site construction noise would result from the operation of heavy-duty construction equipment such as bulldozers, backhoes, and cranes. Off-site noise would be produced by trucks transporting construction materials and workers to and from the staging areas, transmission line ROW, and substation site. Anticipated noise levels from individual pieces of construction equipment would typically range from 70 dBA to 100 dBA at a distance of approximately 50 feet, as indicated in Table 4.12-4. Noise levels are calculated based on the assumption that point source noise is reduced by approximately 6 dBA with each doubling of the distance from the source of the noise. As noted in Table 4.12-4, the use of heavy equipment during construction would generate intermittent noise in excess of 65 dBA. This noise would be audible to residences located within 50 feet of the Project. However, these noise levels would be short-term in duration and would occur during the day time hours only. When compared to existing noise sources within the Project vicinity (e.g., vehicles on adjacent roads and I-5, farming equipment), these intermittent noises would not represent a significant change or impact over the existing noises within the area.

**TABLE 4.12-4 TYPICAL CONSTRUCTION EQUIPMENT NOISE LEVELS**

EQUIPMENT	RANGE OF NOISE LEVEL AT 50 FEET (DBA)
<b>Earthmoving</b>	
Front loaders/Excavators	72 – 84
Backhoes	72 – 93
Tractors	76 – 96
Scrapers/ graders	80 – 93
Pavers	86 – 88
Trucks	82 – 94
<b>Materials Handling</b>	
Concrete mixers/Millers	75 – 88
Concrete pumps/Spreaders	81 – 83
Cranes (movable)	75 – 86
Cranes (derrick)	86 – 88
<b>Stationary</b>	
Pumps	69 – 71
Generators	71 – 82
Compressors	74 – 86
Drill rigs	70 – 85

Source: WIA 1986.

Demolition of the existing Mt. Shasta Substation and construction of the new Lassen Substation and transmission and distribution line upgrades would include the temporary and intermittent use of trucks bringing construction materials and personnel to and from the proposed substation site, staging areas, and transmission and distribution line ROW and easements. The site and transmission/distribution line construction activities would take place in rural agricultural areas, although some activities would be in or adjacent to rural residential areas. Construction occurring in proximity to residential areas would occur between 7:00 a.m. and 7:00 p.m.

While impacts associated with demolition and construction activities will be less than significant, PacifiCorp will employ the following noise-reducing practices in an effort to further reduce noise produced by these activities:

- Comply with muffler requirements set by the manufacturer.
- Turn off engines when not in use, as applicable.
- Minimize unnecessary use of equipment.
- Compressors and other small stationary equipment would be shielded with portable barriers.
- “Quiet” equipment (i.e., equipment that incorporates noise control elements into the design, including some models of jackhammers and compressors) would be used during construction.
- Equipment exhaust stacks/vents would be directed away from buildings.
- Truck traffic would be routed away from noise-sensitive areas where feasible.

### Operation Impacts

Operation of the proposed Project would consist of routine, short-term inspection and maintenance of the facilities. Although the Lassen Substation would be unmanned and remotely monitored, routine maintenance activities would occur as needed and would consist of testing, monitoring, and repairing equipment. Maintenance of the transmission/distribution lines would occur on as-needed basis, and activities would include repairing conductors, replacing insulators, replacing poles, and access road maintenance. Because operations would involve limited amounts of activities, the proposed Project would not contribute to a temporary increase in ambient noise in the area. Impacts would be less than significant.

- e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

**No Impact.** The nearest public use airport is the Dunsmuir Municipal-Mott Airport, which is located approximately four miles southwest of the proposed Project. No noise impacts associated with the airport operations are anticipated to affect people working within the Project area. No impacts are anticipated.

- f) **For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?**

**No Impact.** There are no private airstrips located within the vicinity of the proposed Project. Therefore, the proposed Project would not expose people working in the proposed Project Area during construction, operation, or decommissioning to excessive noise levels attributable to an airport or private airstrip. There is no impact.

## 4.13 Population and Housing

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.13.1 Methodology

Demographics and housing data were obtained from existing local, State, and federal websites and databases, including:

- United States Census Bureau
- State of California Department of Finance
- County of Siskiyou Planning Department
- City of Mt. Shasta Planning Department

### 4.13.2 Environmental Setting

#### Regulatory Framework

There are no population or housing laws, rules, or regulations that apply directly to the proposed Project.

#### Population

As shown in Table 4.13-1, the U.S. Census Bureau 2013 population estimate for the City of Mt. Shasta is 3,360, between 2000 and 2010 the population decreased by 6.2 percent, from 3,621 in 2000 to 3,394 in 2010. Between 2010 and 2013 the population decreased 1.0 percent, from 3,394 to 3,360 (U.S. Census Bureau 2014). The Department of Finance (DOF) provides projections for all counties through 2060; however, population projections for the City of Mt. Shasta are not currently available from the DOF.

Population projections for the City of Mt. Shasta were obtained from the City of Mt. Shasta General Plan Public Hearing Draft 2014-2019 Housing Element and the Siskiyou County General Plan Housing Element (2010). According to the City of Mt. Shasta's General Plan Draft Housing Element, the City is expected to experience an overall population increase from 2010 to 2050.

As Shown in Table 4.13.1, the U.S. Census Bureau 2013 population estimate for Siskiyou County is 43,799, between 2000 and 2010 the population increased by 1.4 percent, from 44,301 in 2000 to 44,900 in 2010. Between 2010 and 2013 the population decreased 2.5 percent, from 44,900 to 43,799

(U.S. Census Bureau 2014). Based on population projections by the DOF, the County is expected to experience a slight overall population increase from 2010 to 2050.

**TABLE 4.13-1 SISKIYOU COUNTY AND CITY OF MT. SHASTA POPULATION ESTIMATES**

AREA	2000	2010	% CHANGE 2000-2010	2013	% CHANGE 2010-2013	2020	2030	% CHANGE 2020-2030	2040	2050	% CHANGE 2040-2050
City of Mt. Shasta	3,621	3,394	-6.2	3,360	-1.0	4,131	4,368	5.7	4,643	4,935	6.3
Siskiyou County	44,301	44,900	1.4	43,799	-2.5	46,369	48,883	5.4	51,854	52,130	0.5

Sources: U.S. Census Bureau 2014, Siskiyou County 2014, and City of Mt. Shasta 2014.

### Housing

According to the U.S. Census Bureau in 2010, Siskiyou County had 23,910 housing units, with 18.4 percent of these units vacant. In 2013, Siskiyou County had 23,981 housing units, with a 19 percent vacancy rate (U.S. Census Bureau 2014). The composition of housing in the unincorporated areas of the County is mostly single-family.

In 2010, the City of Mt. Shasta had 1,895 housing units, with a 12.2 percent vacancy rate. In 2013, the City of Mt. Shasta had 2,048 housing and a 20 percent vacancy rate (U.S. Census Bureau 2014). According to the City of Mt. Shasta General Plan Draft Housing Element, a majority of the households are renter occupied.

### 4.13.3 Environmental Analysis

Would the Project:

- a) **Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

#### Construction Impacts

**Less than Significant Impact.** Construction activities are anticipated to occur for approximately six to 12 months; the estimated deployment and number of crew members would be dependent on local jurisdiction permitting, material availability, and construction scheduling. During peak times, the maximum total personnel required during the six-month construction duration would be about 43 craft workers per day. This is the peak estimate considering all tasks, the actual personnel onsite at any one time could be less. The increased demand for workers for construction of the proposed Project would be temporary, and therefore would not induce substantial population growth in the area. The proposed Project may require temporary accommodations for construction workers during construction. However, this need is anticipated to be met by hotels and motels in the vicinity of the proposed Project, as there are a number of hotels and motels available primarily in the cities of Mt. Shasta and Weed. Therefore, no new housing would need to be built for temporary construction workers. No new access roads would be constructed in order to accommodate construction and maintenance activities. Potential impacts related to population growth (directly or indirectly) in the area during construction would be less than significant.

### **Operation Impacts**

**No Impact.** The proposed Project would not include any new homes, so there would be no direct impact on population growth in the area. The proposed substation would be unattended and remotely operated, requiring only occasional visits for routine maintenance and emergency repair. The frequency of inspection and maintenance activities would depend upon weather effects and any unique problems that may arise due to such variables as substantial storm damage or vandalism.

The proposed Project is required to ensure the availability of safe and reliable electric service to meet customer electrical demand in the Electrical Needs Area. Existing facilities do not meet forecasted, long-term electrical demand within the Electrical Needs Area. The proposed Project would not induce growth, but instead is designed to respond to existing growth and demand trends.

Operation of the proposed Project would not create new opportunities for local industry or commerce or impact population growth in the area beyond what is already planned by Siskiyou County and the City of Mt. Shasta. As operation of the proposed Project would not induce population growth, there would be no impact.

**b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

**No Impact.** The Lassen Substation will be built immediately east of the existing Mt. Substation. PacifiCorp has acquired two parcels (036-220-280 and 036-220-170). One residence, consisting of a two-story single-family home and associated structures, is currently located on parcel 036-220-280. A single-story mobile home and storage shed is located on parcel 036-220-170. Both these residences are vacant; therefore, the construction of the Lassen Substation would not result in the displacement of any people. No impact would occur relative to displacing existing housing, since approximately 19 percent and 12.2 percent of available residential units in Siskiyou County and Mt. Shasta, respectively are vacant.

**c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**No Impact.** Refer to Checklist 4.13b, above.

## 4.14 Public Services

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the following public services:				
Fire Protection?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
Police Protection?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
Other Public Facilities?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>

### 4.14.1 Methodology

Information regarding local public services was primarily gathered from an Internet search of local planning agencies. Specifically, information regarding fire and emergency services was obtained from the Mt. Shasta Fire Protection District. Information regarding local area schools was obtained from the Siskiyou Union High School District and the Mt. Shasta Union School District websites. Information regarding police services was obtained from the Siskiyou County Sheriff's Department website. Internet searches were conducted in order to obtain information regarding hospitals and libraries.

### 4.14.2 Environmental Setting

#### Regulatory Framework

##### *Siskiyou County General Plan*

The following policies from the Energy Element of the Siskiyou County General Plan (Siskiyou County 1993) may apply to this project and its effects on the operation of public services:

- *Policy 35:* The siting and operation of energy facilities shall be accomplished so as not to exceed the carrying capacity of affected public infrastructure, including but not limited to roads and highways, water and wastewater systems, public safety services, and schools. Where applicable, the actual cost of public improvements directly necessitated by a specific energy facility shall be paid by the facility developer.
- *Policy 37:* Energy facilities shall prepare and periodically update emergency plans for reasonably foreseeable accidents and emergency incidents, and such plans shall be coordinated with local public safety agencies.

### ***City of Mt. Shasta General Plan***

The following policies from the Safety Element of the City of Mt. Shasta General Plan (City of Mt. Shasta 2007a) may apply to this Project and its effects on the operation of public services:

- *Policy SF-4.1(d)*: Amend the land development code to require adequate fire suppression water supplies for all new development, other than the construction of a single-family home on an existing single family parcel.
- *Policy SF-4.2(b)*: Amend the land development code to require that cul-de-sacs serving individual parcels with a length of more than three hundred feet be wide enough to allow for incoming-and outgoing vehicles during a fire emergency. The minimum paved width shall be twenty feet with two four-foot shoulder areas.

### **Existing Conditions**

#### Fire Protection and Emergency Medical Services

Fire protection services for the City of Mt. Shasta are provided by the Mt. Shasta City Fire Department and the Mt. Shasta Fire Protection District (District). Because the Project area is outside of the city limits in an unincorporated area of Siskiyou County, it is served by the District. The District serves a 21-square-mile area; it has two volunteer stations consisting of a total of twenty personnel, three engines, one water tender, and two rescue units (Mt. Shasta Fire Protection District 2005). One station is located at 600 Michelle Drive, 0.5 mile from the proposed substation site, while the other station is located on North Old Stage Road (City of Mt. Shasta 2007b). The District has an established mutual aid agreement with the City Fire Department, and both services cooperate with the U.S. Forest Service and California Department of Forestry and Fire Protection (City of Mt. Shasta 2007b). The District also provides search and rescue, vehicle rescue, basic life support emergency medical services, and hazardous material response services.

#### Police Protection Services

The Siskiyou County Sheriff's Department serves the Siskiyou County area, with its main office located in Yreka. It also has a precinct, located on Ski Village Drive just north of the City of Mt. Shasta, which serves southern Siskiyou County (City of Mt. Shasta 2007b). Its Contract Law Enforcement program provides full law enforcement services to four contract cities including Montague, Dunsmuir, Fort Jones, and Dorris. In addition, the Sheriff's Department provides dispatch and call receipt services on Lava Beds National Monument, the Klamath National Forest, and the Shasta-Trinity National Forest.

#### School Services

The City of Mt. Shasta is served by the MSUSD, the WUESD, and the SUHSD. The MSUSD and WUESD formed a partnership to share administrative services. The MSUSD and WUESD are comprised of three schools: Mt. Shasta Elementary School, Sisson Elementary School, Strawberry Valley School and Weed Elementary (kindergarten through 8<sup>th</sup> grades) (MSUSD and WUESD 2014). Mt. Shasta Elementary School is located at 501 Cedar Street approximately 0.6 mile from the proposed substation site and serves kindergarten through 3<sup>rd</sup> grades, while Sisson Elementary School and Strawberry Valley School are both located approximately 1.2 miles from the site at 601 East Alma Street. Sisson Elementary School serves 4<sup>th</sup> through 8<sup>th</sup> grades and Strawberry Valley School serves 2<sup>nd</sup> through 5<sup>th</sup> grades. The SUHSD has six schools within the district and two schools within the City of Mt. Shasta: the Mt. Shasta High School, located at 710 Everitt Memorial Highway, and Jefferson High School, located at 720 Rockfellow Drive (SUHSD 2014). Both high schools are

located approximately 1.4 miles from the proposed Project site. The Mt. Shasta One Bus has a daily afternoon scheduled stop at 511 South Old Stage Road, located 200 feet from the substation access road (MSUSD and WUESD 2014). Other schools within the City of Mt. Shasta include the Challenge Home Charter School located at 601 East Alma Street, the Mt. Shasta Options for Youth located at 510 North Mt. Shasta Boulevard, and the South County Community Day School located at 720 Rockfellow Drive, and the I AM School, a private school, located at 118 Siskiyou Ave., Mt. Shasta (approximately 0.5 mile from the Project alignment).

### Recreation

See Section 4.15, Recreation, for information regarding existing recreation resources in the vicinity of the Project.

### Other Public Facilities (Hospitals and Library Services)

Mercy Medical Center is located in the City of Mt. Shasta and serves southern Siskiyou County (City of Mt. Shasta 2007b). Mercy Medical Center houses over 270 professionals and support staff, including 45 physicians and more than 100 volunteers (Mercy Medical Center 2011). It is located at 914 Pine Street, approximately 0.9 mile from the proposed substation site. Services provided include general, orthopedic, ear, nose, and throat surgery; urology; radiology; family practice; and internal medicine (City of Mt. Shasta 2007b). A doctor is on duty 24 hours a day and the facility is designated a Level III Trauma Center.

The Mt. Shasta Library is located adjacent to Sisson Elementary School at 515 East Alma Street (City of Mt. Shasta 2007b). It is a branch of the Siskiyou County Library and participates in the North State Library Cooperative System, which provides an inter-library loan service to city and county libraries in the 13 northern California counties.

## **4.14.3 Environmental Impacts**

Would the Project:

- a) **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities?**

### Construction Impacts

**Less than Significant Impact.** Short-term construction activities would not require the expansion of fire protection services in the City of Mt. Shasta or in unincorporated Siskiyou County. The proposed substation site is classified as a very high fire hazard area (Cal Fire 2007). Fire protection to the Project area would be provided by the Mt. Shasta Fire Protection District, as well as the Mt. Shasta Fire Department, when applicable through their mutual aid agreement. Proper fire-safety protocols and standards would be followed during construction of the substation, and it is not expected that the Project would require an increase in fire suppression activities by either of these units. In addition, PacifiCorp would clear vegetation from the work areas prior to staging construction equipment, minimizing the probability of a fire. Construction activities would be performed by either PacifiCorp construction crews or by local contractors managed by PacifiCorp construction management personnel. In general, workers are expected to

be drawn from the local labor pool; therefore, the number of construction workers expected to work in the area is not expected to substantially increase the demand for fire protection services, nor would it alter emergency service response times or service ratios in the area. Due to the temporary nature of the construction period (approximately six to 12 months), construction work is not anticipated to result in the need for new or physically altered fire protection emergency services. The potential for interference with emergency service providers is further discussed in Section 4.8, Hazards and Hazardous Materials.

Construction of the proposed Project is unlikely to require the use of local law enforcement agencies. If necessary, PacifiCorp would hire a local security company to provide 24-hour attendance at the material staging yards during construction, thereby minimizing the involvement of local law enforcement. Once the proposed substation site is graded, a temporary chain link fence would be installed around the substation perimeter for added security. Temporary construction trailers for supervisory and clerical personnel would also be situated at the proposed substation site. Therefore, construction work is not anticipated to result in the need for new or physically altered police protection or emergency services.

The proposed Project would not result in an increase in residential population that would affect the demand for schools. Construction would be temporary and performed by either PacifiCorp construction crews based out of one of the PacifiCorp local facilities or local contractors managed by PacifiCorp construction management personnel who would not be expected to bring a substantial number of spouses and/or any school-age children to the area. Therefore, the proposed Project is not expected to significantly impact school enrollment or the performance objectives of any local public schools.

There would be a less than significant impact on government facilities, such as fire protection, police protection, schools, libraries, hospitals, or other public facilities. Construction-related impacts to recreation facilities in the Project area are evaluated in Section 4.15, Recreation.

### **Operation Impacts**

**Less than Significant Impact.** Operation of the proposed Project would consist of routine inspection and maintenance of facilities. These activities are unlikely to require the use of public services.

The proposed Project would be unattended, and electrical equipment within the proposed substation would be remotely monitored and controlled by an automated system. PacifiCorp personnel would visit for electrical switching, resulting in only occasional visits for routine maintenance purposes. Routine maintenance would include equipment testing, monitoring, and repair. Therefore, operation of the proposed Project would not significantly affect police and fire protection response times or create higher demand for these public services.

The proposed Project is required to ensure the availability of safe and reliable electric service to meet customer electrical demand in the Electrical Needs Area. Existing facilities would not meet forecasted, long-term electrical demand within the Electrical Needs Area. The proposed Project would not induce growth, but instead is designed to respond to existing growth and demand trends. Because operation of the proposed Project would have no growth-inducing impacts, it would not create a need for new schools, hospitals, or other public services. Therefore, impacts on public services resulting from the operation of the proposed Project would be less than significant. Long-term impacts to recreational facilities in the proposed Project area are evaluated in Section 4.15, Recreation.

## 4.15 Recreation

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.15.1 Methodology

The recreation analysis involved a review of various documents including aerial photographs of the proposed Project area, the Siskiyou County General Plan (1980), City of Mt. Shasta General Plan (2007), 7.5-minute series quadrangle maps, Thomas Brothers Guide maps, and a Project site visit.

### 4.15.2 Environmental Setting

#### Regulatory Framework

There are no recreation-related laws, rules, or regulations that apply to the proposed Project.

#### Existing Conditions

##### Regional

More than 60 percent of the land in Siskiyou County is under public ownership, the majority of which includes portions of the Klamath, Modoc, and Shasta-Trinity national forests. Aesthetic and recreational resources associated with the mountains and forested ridges of Siskiyou County have made the Mt. Shasta area a major seasonal retreat. Outdoor attractions, such as sight-seeing, fishing, hunting, camping, hiking, and skiing opportunities, draw the attention of tourists and day-trippers during the summer and winter months.

##### Local

The Mt. Shasta Recreation and Parks District (MSRPD) administers public recreation facilities and programs within a 91,000 acre service area that surrounds and includes the City of Mt. Shasta. The MSRPD is governed by a five-member Board of Directors. Board members are appointed by the County Board of Supervisors and the Mt. Shasta City Council and serve a term of four years (MSRPD 2009). The MSRPD Facilities Master Plan was completed in 2003, and serves as the primary planning document for the District. Within the City of Mt. Shasta, the MSRPD operates the following parks: City Park, Shastice Park, the "Sports Park," and Sisson Field (MSRPD 2009).

##### Existing Recreation in Project Vicinity

No parks or other recreational facilities are currently located in the immediate Project area. Recreational uses in the Project vicinity include passive activities such as bicycling, walking, and

jogging. A portion of I-5 extending from the City of Weed to the SH 89 interchange has been designated part of the Volcanic Legacy Scenic Byway All American Road. Scenic views of Mt. Shasta are enjoyed by freeway travelers passing through the general area. Recreational uses in the Project vicinity also include passive activities, such as bicycling, walking, and jogging.

#### Planned Recreation in the Project Vicinity

Recent planning efforts seek to establish trail linkage between the City of Mt. Shasta and existing recreational facilities. Planning documents for the area include the City of Mt. Shasta General Plan, the 2008 City of Mt. Shasta Bicycle, Pedestrian, and Trails Master Plan, and the Siskiyou County Bicycle Transportation Plan (Proposed). Planned recreation within the greater Project area includes a Class II trail that would extend along Lake Street, from Washington Drive to Fish Hatchery Lane. The trail would consist of an on-street bicycle facility and would provide east/west connectivity with previously established crossings of the I-5 and the Union Pacific Railroad (City of Mt. Shasta 2009).

### **4.15.3 Environmental Impacts**

Would the Project:

- a) **Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

**No Impact.** Construction and operation of the proposed Project would not cause population growth that would result in increased use of recreational facilities. The proposed substation site would be unattended and automated, requiring only occasional visits for routine maintenance and emergency repair. Recreational uses in the Project vicinity include passive activities such as bicycling, walking, and jogging. Traffic during Project construction near these areas could briefly disrupt recreational activities, but long-term operation of the Project would not interfere with recreational activities. Thus, the Project does not involve any direct or indirect actions that would create an increased demand for recreational services.

- b) **Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?**

**No Impact.** Construction and operation of the proposed Project would not include recreational facilities or require the construction or expansion of recreational facilities, as it would not induce population growth. As a result, there would be no impact to the environment from new or expanded recreational facilities.

Recreational uses in the Project vicinity include passive activities such as bicycling, walking, and jogging. Traffic during Project construction near these areas could briefly disrupt recreational activities, but long-term operation of the Project would not interfere with recreational activities. Thus, the Project does not involve any direct or indirect actions that would create an increased demand for recreational services. No mitigation measures are required.

## 4.16 Transportation/Traffic

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance, or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways, and freeways, pedestrian and bicycle paths, and mass transit?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
e) Result in inadequate emergency access?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.16.1 Methodology

This analysis relied on the collection of available traffic data and other transportation system information. Traffic data and other transportation system information were obtained from the Siskiyou County General Plan Circulation Element (1987), the City of Mt. Shasta General Plan Circulation Element (1987), the City of Mt. Shasta Bicycle, Pedestrian, and Trails Master Plan (2009), maps, and web searches. Impacts to transportation and traffic were then determined based on Project construction and anticipated operation procedures.

### 4.16.2 Environmental Setting

#### Regulatory Framework

##### State

*California Department of Transportation*

Caltrans manages interregional transportation, including management and construction of the California Highway System. In addition, Caltrans is responsible for permitting and regulation of the

use of state roadways. The Project area includes one roadway (I-5) that falls under Caltrans' jurisdiction.

Caltrans' Construction Manual requires temporary traffic control planning "during any time the normal function of a roadway is suspended" (Caltrans 2001). In addition, Caltrans requires that permits be obtained for transport of oversized loads and of certain materials (California Vehicle Code Division 15), and for construction-related traffic disturbance. The Project would include construction of the proposed Lassen Substation, installation of steel transmission poles in a rural residential area, and demolition of the existing Mt. Shasta Substation. This would require the transportation of construction crews as well as Project materials throughout the Project area. Prior to Project construction, all necessary transportation and encroachment permits would be obtained from Caltrans in accordance with the Caltrans Transportation Permit Manual and Encroachment Permit Manual. In addition, construction activities would follow Caltrans' BMPs to minimize impacts to traffic and transportation in the Project area, as applicable.

### Local

#### *Siskiyou County*

Local roads within the Project area are under the jurisdiction of Siskiyou County. Local roads utilized during construction and maintenance of the Project may include North Old Stage Road, South Old Stage Road, Fish Hatchery Lane, Lake Street, and West Ream Avenue.

County policies and regulations regarding the design or use of roadways are detailed in the Circulation Element of the Siskiyou County General Plan. Siskiyou County requires an encroachment permit for any impediment to travel on highways over which the County has jurisdiction, and requires a transportation permit to carry extralegal loads on County roadways.

#### *City of Mt. Shasta*

The City of Mt. Shasta outlines local policies and regulations regarding the design or use of roadways within city limits in the Circulation Element of the City of Mt. Shasta General Plan. In addition, the City has introduced a Bicycle, Pedestrian, and Trails Master Plan that provides for a city-wide network of bicycle paths, lanes, and routes, along with bicycle- and pedestrian-related programs and support facilities. While the proposed Project is located in unincorporated Siskiyou County, it is also within the City's Sphere of Influence.

### **Existing Conditions**

The regional transportation system comprises interstate highways, state highways and local roads within Siskiyou County and the cities of Mt. Shasta, Dunsmuir, and Weed. Regional access to the area is provided by three major freeways: I-5, U.S. Route 97, and SH 89. Other transportation systems include public transit, rail, non-motorized, and aviation.

Regional and local access to the proposed Project site is provided by I-5. I-5 is a north-south freeway that extends from the Mexican border to the Canadian border, traversing the states of California, Oregon, and Washington. In the Project vicinity, I-5 is generally a four-lane, limited access freeway that traverses in a northwesterly direction. Traffic volume data along I-5 in the Project area are provided in Table 4.16-1.

**TABLE 4.16-1 EXISTING TRAFFIC VOLUME LEVELS IN THE PROJECT AREA, INTERSTATE 5**

POSTMILE	DESCRIPTION	BACK PEAK HOUR (1)	BACK PEAK MONTH (2)	BACK AADT (3)	AHEAD PEAK HOUR (4)	AHEAD PEAK MONTH (5)	AHEAD AADT (6)
8.475	Jct. Rte. 89 East	3,000	23,600	19,600	2,850	23,100	19,600
10.485	Mt. Shasta, Lake Street	2,850	23,100	19,600	2,300	26,500	20,000
12.062	North Mt. Shasta	2,300	26,500	20,000	2,550	29,000	22,900

Source: Caltrans 2009.

Note: AADT = Annual Average Daily Traffic.

The local transportation system in the vicinity of the proposed substation site includes Siskiyou County roadways. The following Siskiyou County roadways may be used to access the Project area: North Old Stage Road, South Old Stage Road, Fish Hatchery Lane, West Lake Street, North Mt. Shasta Boulevard, South Mt. Shasta Boulevard, and West Ream Avenue. These roads have the potential to be impacted during Project construction and maintenance phases, and during the demolition of the existing Mt. Shasta Substation. Roadways in the Project area and County road system carry a low volume of traffic.

Roadways are typically ranked according to guidelines set forth by the Highway Capacity Manual (1997) that assigns a Level of Service (LOS) rating based on factors such as speed, travel time, ability to maneuver, traffic interruptions, and safety. The highest-ranked roadways are designated LOS A, representing free-flow of traffic, and the lowest-ranked roadways are designated LOS F, representing forced or broken-down flow. Siskiyou County considers LOS C as an acceptable standard (Siskiyou County 1987).

#### Truck Routes

Truck routes in California allow a single trailer with a 53-foot maximum length and double trailers with a maximum of 28.5 feet for each trailer. I-5, U.S. Route 97, and SH 89 are designated truck routes.

#### Bikeways and Trails

Bicycle transportation facilities include bicycle paths, bicycle lanes, and bicycle routes. Bicycle paths are trails, paved or unpaved, that are separated from the roadway. Bicycle lanes are roadway lanes dedicated for use by bicycles, and are designated by lane striping, pavement legends, and signs. Bicycle routes are roadways that are shared by both automobiles and bicycles; these roadways are designated by signs for bicycle use, but do not include an additional bicycle lane.

Within the affected Project area, the City of Mt. Shasta Bicycle, Pedestrian, and Trails Master Plan 2009 proposes Class II bicycle lanes along North and South Mt. Shasta Boulevard, from Spring Hill Avenue south to the City limits; along Ream Avenue, from South Mt. Shasta Boulevard to the City limits; and along West Lake Street from Hatchery Lane east to the City limits. Class II bicycle lanes would provide a striped and stenciled lane for one-way travel on a city street or highway. No designated bicycle lanes are currently located in the vicinity of the Project or on roadways likely to be used by construction traffic.

No trails or associated signage exist within the immediate vicinity of the proposed substation site, as evidenced in the City of Mt. Shasta Bicycle Pedestrian and Trails Master Plan 2009.

### Fixed Bus Routes

Fixed-route bus service within Siskiyou County is provided by the Siskiyou Transit and General Express, which serves the following local areas: Mt. Shasta, Dunsmuir, McCloud, Weed, Lake Shastina, Yreka, Gazelle, Grenada, Montague, Hornbrook, Scott Valley and Happy Camp. Service is provided Monday through Friday on ten northbound and ten southbound runs in the Mt. Shasta area. Five Siskiyou Transit and General Express stops are regularly scheduled within the City at the Mt. Shasta Shopping Center, Mercy Medical Center, and three locations along East Ivy Street and Rockfellow Drive; on-call stops can be scheduled upon request. No Siskiyou Transit and General Express terminals are located in the immediate Project area, west of I-5.

### Freight/Passenger Rail Service

Freight rail service is provided by the Union Pacific Railroad and McCloud Railway Company. The Union Pacific Railroad rail line runs the entire length of the states of California, Oregon, and Washington, and numerous other western states. The Union Pacific Railroad enters Siskiyou County at Dunsmuir, and the north-south mainline runs through the City of Mt. Shasta. The McCloud Railway Company runs approximately two trains per week on a single line that connects the community of McCloud with the Union Pacific Railroad line.

Passenger rail service includes Amtrak. Amtrak makes a single stop at its Dunsmuir station, typically early in the mornings to serve the southern area of Siskiyou County, and two passenger trains pass through the City of Mt. Shasta each day on the Union Pacific Railroad. Amtrak Thruway Motorcoach service connects Amtrak train stations with locations not served by the Amtrak railways. These dedicated bus routes extend the reach of the Capital Corridor, San Joaquin, and Pacific Surfliner trains to destinations in southern California and northern California. Amtrak maintains a Thruway Bus Station in the City of Mt. Shasta on West Lake Street approximately 0.2 mile east of I-5. This station is an unstaffed bus stop that serves the Thruway route between Sacramento, California and Medford, Oregon. (Amtrak 2011).

### Air Facilities

The nearest Airport Land Use Compatibility Plan (ALUCP) in effect for operating facilities includes the Dunsmuir Municipal-Mott Airport, located approximately four miles southeast of the proposed Project. The Dunsmuir Municipal-Mott Airport, owned and managed by the City of Dunsmuir, is open to the public. The airport is classified as a landing strip, running east of, and parallel to, I-5 and features a single 2700 x 60 foot asphalt runway. The nearest commercial service airports are located in Redding and Medford, Oregon. A heliport site is located at the Mercy Medical Center of Mt. Shasta (914 Pine Street) in the City of Mt. Shasta.

## **4.16.3 Environmental Impacts**

Would the Project:

- a) **Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

### **Construction Impacts**

**Less than Significant Impact.** Traffic would be generated during construction as a result of required deliveries of materials and equipment to the proposed substation site, staging areas, and pole sites. Construction would be performed by either PacifiCorp construction crews or its contractors. It is estimated that the maximum number of construction-related personnel to construct the proposed Project would be 43 workers. This is the maximum number of personnel that would be required when considering all tasks together. The actual number of personnel onsite at any one time would be less. PacifiCorp anticipates an average of approximately 14 commuting construction personnel working on a given day. These personnel would travel to and from the various construction sites each day. PacifiCorp also anticipates that crews would work concurrently whenever possible; however, the estimated deployment and number of crew members would be dependent upon material availability and construction scheduling. For example, electrical equipment installation may occur concurrently with transmission line pole replacement and distribution line upgrades.

Assuming all personnel commuted to and from the construction area in their own vehicles, this would equate to 28 trips per day. Construction-generated traffic would be temporary (i.e., approximately six to 12 months for the entire Project) and, therefore, would not result in long-term degradation in performance of any of the roadways in the vicinity of the Project components. In addition, not all construction-related trips would be assigned to the same construction location (e.g., crews would be assigned to different sections of the transmission/distribution lines); these Project-generated trips would be dispersed throughout the study area and would occur at varying times throughout the workday. Therefore, the Project would not result in substantial traffic congestion and would not add a substantial number of trips to the roadways in the vicinity of the proposed Project components.

Construction of the proposed Project would not result in a substantial increase in traffic in relation to existing traffic load and capacity of the street system. Additionally, it would not affect pedestrian or bicycle paths or mass transit. As a result, impacts related to increased traffic during construction would be less than significant.

### **Operation Impacts**

**Less than Significant Impact.** The proposed substation would be unattended and remotely operated. The frequency of inspection and maintenance activities would depend upon weather effects and any unique problems that may arise due to such variables as substantial storm damage or vandalism. Vegetation management in the transmission/distribution line ROW and easements may include the control of noxious weeds and the periodic trimming of shrubs or trees to reduce fire fuel. These operations would not result in a substantial increase in traffic in relation to existing traffic load and capacity of the street system. As a result, impacts to an increase in traffic during operation of the proposed Project would be less than significant.

- b) **Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

### **Construction and Operation Impacts**

**Less than Significant Impact.** See Discussion above under 4.17.3 a). Impacts are anticipated to be less than significant.

- c) **Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?**

**No Impact.** The proposed Project does not involve the use of air traffic, and so would have no impact relating to an increase in air traffic levels. It is not anticipated that construction and operation of the proposed Project would involve the use of helicopters. Similarly, the proposed Project would not cause a change in air traffic patterns related to the Dunsmuir Municipal-Mott Airport, which is four miles southeast of the proposed substation. In addition to the construction of the new substation, the project would involve replacing 36 wood poles with upgraded wood poles framed for 115 kV and distribution underbuild and the installation of three new wood poles to connect the existing transmission system to the new Lassen substation. The new wood poles are expected to be similar in height to the existing poles. The maximum height of the new transmission poles would be 75 feet. The proposed Project, however, does not cross any compatibility zones associated with the Dunsmuir Municipal-Mott Airport and, therefore, would not conflict with the airport. There would be no impact to air traffic patterns from construction and operation of the proposed Project.

- d) **Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**No Impact.** The proposed Project would not alter the configuration (alignment) of area roadways, introduce curves, or add intersections or other design features that could increase hazards due to design features. The proposed Project that would not create an incompatible use with transportation or traffic. The width of the proposed substation site access driveway off of South Old Stage Road will be designed and improved to accommodate large truck movements, deliveries, and construction equipment used for construction of the proposed substation. No impacts would occur.

- e) **Result in inadequate emergency access?**

#### **Construction Impacts**

**Less than Significant Impact.** Construction and demolition activities associated with the proposed Project may require alterations to local roadways. As such, if any work requires modifications or activities within the local road ROWs, PacifiCorp would obtain appropriate local permits. This process would involve the preparation of appropriate management plans and provisions to ensure adequate compliance with local ordinances. Also, if any work were to potentially limit access, permits would be obtained and plans would be implemented to ensure safety and avoid the closure of any emergency access route. Therefore, construction of the proposed Project would not result in inadequate emergency access to the area affected by the proposed Project. As a result, impacts to emergency access would be less than significant.

#### **Operation Impacts**

**Less than Significant Impact.** Operation of the proposed Project would not result in a substantial increase in traffic in relation to existing traffic load and capacity of the street system. Therefore, operation of the proposed Project would not result in inadequate emergency access to the area affected by the proposed Project. As a result, impacts to emergency access would be less than significant.

**f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

**No Impact.** Siskiyou County has not adopted any policies, plans, or programs supporting alternative transportation. The Mt. Shasta Bicycle, Pedestrian, and Trails Master Plan does not apply to the portion of the Project that would be within the City of Mt. Shasta. Therefore, the Project would not conflict with any adopted policies, plans, or programs, nor would the Project decrease the performance or safety of such facilities. No impact would occur, and no mitigation would be required.

## 4.17 Utilities and Services Systems

Would the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the projects projected demand in addition to the providers existing commitments?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
g) Comply with federal, state, and local statutes and regulations related to solid waste?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

### 4.17.1 Methodology

This analysis relied on the collection of available utilities and service systems information. Data and other information were obtained from the Siskiyou County website, the Siskiyou County Economic Development council, and other sources. Impacts to utilities and service systems were then determined based on Project construction and anticipated operation procedures. Measures to mitigate potential impacts were identified based on existing and future conditions.

The development and regulation of the Project area primarily involves State and local jurisdictions. Applicable State and local laws and regulations related to utilities and service systems issues are discussed below.

## 4.17.2 Environmental Setting

### Regulatory Framework

#### State

##### *California Integrated Waste Management Act of 1989*

The California Integrated Waste Management Act of 1989 (PRC Division 30), enacted through Assembly Bill 939 and modified by subsequent legislation, requires all California cities and counties to implement programs to reduce, recycle, and compost at least 50 percent of waste disposed by the year 2000 (PRC Section 41780). The State determines compliance with this mandate to “divert” 50 percent of generated waste, which includes both disposed and diverted waste (PRC Section 41780.2).

#### Local

##### *Siskiyou County General Plan*

The Siskiyou County Conservation Element (1973) delineates guidelines to maintain sufficient water supply and sewage disposal for the proposed Project. The Conservation Element objective below would be applicable to the proposed Project:

*To preserve the quality of the existing water supply in Siskiyou County and adequately plan for the expansion and retention of valuable water supplies for future generations and to provide for a comprehensive program for sustained multiple use of watershed lands though reduction of fire hazards, erosion control and typeconversion of vegetation where desirable and feasible*

Siskiyou County’s 2009 Housing Element (2010) specifies programs, policies, and goals to meet the housing needs of the County. The following goal would be applicable to the proposed Project:

- *Goal HE.2:* Provide adequate sites and services to accommodate the County’s share of Regional Housing Needs.

Siskiyou County’s 1993 Energy Element (1993) specifies goals, policies, and measures to meet the energy needs of the County. The following goals, policies, and measures would be applicable to the proposed Project.

*Energy Goal:* a diverse, least-cost energy supply portfolio that is in balance with County energy demands; with an ability to accommodate future energy needs in a reliable, affordable, and environmentally-sound manner; and which gives priority to local self-sufficiency.

*Policy #1:* Proposed energy projects and programs shall be evaluated in part, by the degree to which they support goal achievement.

*Policy #2:* The County shall monitor state and regional energy planning processes to identify potential local impacts; and where appropriate, shall participate in such processes to advocate local energy goals and policies.

*Policy #3:* Cooperative efforts shall be encouraged among local agencies and energy utilities to promote energy awareness and recognize energy accomplishments in the County.

*Policy #5:* Citizens, businesses, and affected utilities and agencies shall be provided with opportunities to participate in all phases of County energy planning and decision making.

*Energy Facilities Goal:* Thorough and expeditious evaluation of energy facility proposals; siting of such facilities in a timely, orderly, and environmentally-sound manner; and assurance of the compatible and environmentally-sound operation, maintenance, and eventual abandonment of such facilities.

*Policy #29:* For purposes of applying Policies 30 through 40, “energy facilities” shall be defined as those which use any type of fuel or energy resource to produce electrical power or thermal energy of 500 kW capacity or more (or the thermal equivalency thereof); and those which transmit electrical power of 69 kV capacity or more, or pipelines conveying thermal energy and exceeding one-quarter mile in length.

*Policy #30:* Proponent applications for energy facility projects shall contain comprehensive information in sufficient detail to enable the County to conduct a thorough analysis of the project. At a minimum, information shall include descriptions of all project phases (resource or fuel supply confirmation, construction, operations, maintenance, abandonment); the facility’s physical and performance characteristics; environmental effects of all project phases; and a project cost/benefit analysis that includes a County fiscal component.

*Policy #31:* Energy facilities shall only be approved if in compliance with all applicable provisions of the General Plan and Zoning Ordinance; and construction shall start only after all applicable federal, state, and local permits have been obtained and permit conditions satisfied.

*Policy #32:* In the absence of compelling or contravening considerations, energy facilities should not be sited in sensitive natural resource areas, including: unstable geologic or soil areas; floodplains; wetlands; habitat of fish or wildlife species of rare, threatened, endangered, or special concern status; known paleontological, archeological ethnographic, or historical sites; or designated scenic areas. If siting in such areas is unavoidable, it shall be limited to the smallest possible portion of the energy facility in question, and shall be mitigated in accordance with CEQA.

*Policy #33:* Wherever possible, increased demand for energy transmission shall be accommodated with existing transmission facilities. Where new capacity is necessary, priority shall be given to upgrading or reconstruction of existing facilities, followed by new construction along existing transmission or other utility corridors. Any new transmission facilities shall be sited so as to minimize interference with surrounding land-uses, and in ways that minimize their visual impacts.

*Policy #34:* The operation of energy facilities shall not violate, or threaten to violate, applicable environmental standards, including noise, wastes, pollutant discharges, or electronic discharges or interference.

*Policy #35:* The siting and operation of energy facilities shall be accomplished so as not to exceed the carrying capacity of affected public infrastructure, including but not limited to roads and high ways, water and wastewater systems, public safety services, and schools. Where applicable, the actual cost of public improvements directly necessitated by a specific energy facility shall be paid by the facility developer.

*Policy #36:* Energy facilities shall minimize the generation of wastes and allow for their recycling whenever practical. Wastes shall only be transported and disposed in accordance with applicable laws and regulations.

*Policy #38:* If and when abandoned, energy facility sites shall be reclaimed according to a plan that restores and preserves land values for subsequent and surrounding uses.

*Policy #40:* The County Planning Department shall monitor interstate transmission planning processes for electricity and natural gas lines that affect Siskiyou County, and participate when appropriate in order to advocate County energy facility policies.

*Implementation Measure D:* The County Planning Department shall establish and maintain regular communications and coordination with the following “core” group of energy-related organizations: PacifiCorp, California Energy Commission, CPUC, California Division of Oil and Gas, Caltrans, Federal Energy Regulatory Commission (FERC), USFS, BLM, Western Area Power Administration, Transmission Agency of Northern California, and Pacific Gas Transmission. Each of these organizations shall receive: a copy of the adopted Element; ongoing requests for review and comment on energy proposals submitted to the County; and requests for reciprocal opportunities for the County to comment on energy projects or programs being considered by each organization that may impact the County.

*Implementation Measure F:* The County Planning Department shall establish and maintain regular communications with regional, state, and federal agencies responsible for environmental resources impacted by energy development in a manner similar to that described above for the core energy group. Environmental coordination should focus on sustainable resource management, and insure that that ongoing energy facility operations are compatible with surrounding land-uses and natural resources.

*Implementation Measure I.5:* Any drilling shall occur in a manner that minimizes the generation of hazardous materials and waste; allows for their recycling whenever practical; and is in compliance with all applicable waste management regulations. The use of portable tanks and sumpleless drilling shall be encouraged, particularly when located within 500 feet of surface waters.

*Implementation Measure I.8:* Operations shall conform to established water rights, and shall not adversely affect other beneficial users of water.

*Implementation Measure K:* Amend the Zoning Ordinance to require that all electric transmission lines of 69 kV capacity or greater comply with County standards.

*Implementation Measure K.5:* Cooperative study of opportunities for providing wholesale power to local jurisdictions from transmission lines constructed in their vicinity should be encouraged.

Siskiyou County’s 1997 General Plan Land Use Policies (1997a) specifies goals, policies, and measures to meet the energy needs of the County. The following policies would be applicable to the proposed Project.

*Policy 41.6:* There shall be a demonstration to the satisfaction of the Siskiyou County Health Department and/or the RWQCB that sewage disposal from all proposed development will not contaminate ground water.

*Policy 41.7:* Evidence of water quality and quantity acceptable to the Siskiyou County Health Department must be submitted prior to development approval.

*Policy 41.8:* All proposed development shall be accompanied by evidence acceptable to the Siskiyou County Health Department as to the adequacy of on-site sewage disposal or the ability to connect into an existing city or existing Community Services District with adequate capacity to accommodate the proposed development. In these cases the minimum parcel sizes and uses of the land permitted for all development will be the maximum density and land uses permitted that will meet minimum water quality and quantity requirements, and the requirements of the county's flood plain management ordinance.

### **Existing Conditions**

This section describes existing conditions relating to utilities and services systems for the proposed Project, located in an unincorporated part of Siskiyou County. The proposed Project is within the sphere of influence of the City of Mt. Shasta; however, the Project location is not afforded the utility amenities provided by the City. Utilities and service systems include power, natural gas, communications, water, sewer and septic facilities, and solid water disposal and recycling.

#### Power and Natural Gas

Electrical power service within the Project area is supplied by PacifiCorp d/b/a Pacific Power (Siskiyou County Economic Development Council 2008). Pacific Power serves approximately 1.8 million customers in six western states, with a service region that includes northern California. This service region, which includes Siskiyou County, mainly provides hydro-generated (renewable) electricity; hydro facilities are located on the Klamath River. After hydro-generated power, biomass, in the form of firewood, ranks second among renewable power energy resources used in Siskiyou County. Approximately 40 percent of homes in the County utilize firewood for their heating requirements; a minimum of 80 percent of the remaining households reportedly use firewood as a secondary heating source. Other renewable power energy resources utilized in Siskiyou County are solar (primarily residential installations) and geothermal, also in mostly a residential capacity via geothermal heat pump systems (Siskiyou County 1993). Natural gas is not accessible within Siskiyou County; though numerous local providers have offered an alternative that has proven successful (Siskiyou County Economic Council 2006). However, a natural gas transmission pipeline passes near the east and southeast edges of Siskiyou County. Operated by Pacific Gas Transmission, the line is under expansion to transport natural gas to California consumers. Retail customer service in Siskiyou County would be improbable, due to the low population; industrial (power plant or agriculture) customer service, however, could be feasible (Siskiyou County 1993).

#### Communications

Most of Siskiyou County's land telephone lines are provided by PAC-West Telecomm, Inc., with Cal-Ore Telephone Company serving Butte Valley and Tulelake areas, and Siskiyou Telephone Company serving Scott Valley and Klamath River communities. There are numerous long distance carrier providers with the most common being AT&T, Sprint, and MCI. Most local telephone companies offer telecommunication service. The Siskiyou County Economic Development Council's Time-Share office includes access to DSL (Siskiyou County Economic Development Council 2008).

#### Water

The proposed Project is located in an unincorporated area of Siskiyou County and is not served by any water district. Most of the surrounding area receives water via individual water wells through permits with the Siskiyou County Public Health Department (Navarre 2006).

### Sewer and Septic facilities

Individual sewage disposal systems service properties within unincorporated Siskiyou County through permits with the Siskiyou County Public Health Department (Navarre 2006). Generally, sewer and septic facilities are offered by local municipalities (Siskiyou County Economic Development Council 2008). Any new construction, alterations, repairs, and reconstruction within unincorporated Siskiyou County follows the Sewage Disposal Code outlined by the Siskiyou County Public Health Department (Siskiyou County 2006). Among all the communities in unincorporated areas of Siskiyou County, seven (Lake Shastina, McCloud, Happy Camp, Hornbrook, Tennant, and Callahan) have a community wastewater system or have arranged to use an adjacent city's wastewater treatment facilities. There are five community service districts that meet the demands for sewer and waste water treatment in Siskiyou County (Table 4.17-1) (Siskiyou County 2010).

**TABLE 4.17-1 COMMUNITY SERVICE DISTRICTS IN SISKIYOU COUNTY**

DISTRICTS	CURRENT PERCENT CAPACITY	CURRENT CAPACITY (MILLION GAL/DAY)	CURRENT TOTAL USAGE (GAL)	AVERAGE RESIDENTIAL USE (GAL/DAY)	WASTEWATER R CAPACITY	CURRENT WASTEWATER R CAPACITY (GAL/DAY)
Happy Camp Sanitary District	21%	1.4	300,000	545 <sup>1</sup>	50%	175,000
Lake Shastina Community Service District	n/a	5.3	n/a	174 <sup>1</sup>	Near design capacity	125,000-130,000
McCloud Community Service District	25%	12.5	n/a	4,500 (summer) <sup>2,3</sup> 900 (winter) <sup>2,3</sup>	50%	300,000
Hornbrook Community Service District	50% (summer) 25% (winter)	0.2	n/a	12,000 <sup>4</sup>	None <sup>5</sup>	None <sup>5</sup>
Tennant Community Service District	n/a	n/a	n/a	50,000-150,000	n/a <sup>6</sup>	n/a <sup>6</sup>

Source: Siskiyou County 2010.

<sup>1</sup> Per unit.

<sup>2</sup> McCloud Community Service District does not currently meter water usage; thus water usage may be extremely overestimated (Siskiyou County 2010).

<sup>3</sup>Per connection.

<sup>4</sup>Total average residential use.

<sup>5</sup>Hornbrook Community Service District does not currently have wastewater collection and treatment; it relies upon septic systems (Siskiyou County 2010).

<sup>6</sup>Tennant Community Service District has the capacity to serve a limited amount of residential development (Siskiyou County 2010).

### Solid Waste Disposal and Recycling

Siskiyou County Sanitation Department provides a fee-based solid waste disposal system for the entire county. The county possesses five recycling and transfer sites: Black Butte Transfer Station, Happy Camp Transfer Station, Salmon River Area (collection), Tulelake Transfer Station, and Yreka – Oberlin Road Transfer & Recycling Station (Siskiyou County 2011). The Project site is within the jurisdiction of the Siskiyou County Integrated Solid Waste Management Regional Agency (CalRecycle 2011a). Siskiyou County's estimated waste disposal diversion rate as of 2006 was 31 percent (CalRecycle 2006a).

### 4.17.3 Environmental Impacts

Would the Project:

a) **Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

**No Impact.** During construction, portable toilets would be provided for use by construction personnel at the proposed substation site and would be maintained by an outside service company for the construction period. Therefore, wastewater would not be discharged during construction of the proposed Project.

During operation of the proposed Project, a portable chemical unit (portable restroom, not connected to local sewer and wastewater treatment system) would be placed within the substation perimeter wall for use by PacifiCorp personnel and maintenance contractors and would be regularly maintained by an outside service company. The proposed substation would be unattended and remotely operated. Wastewater would not be discharged during operation of the Project.

b) **Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**No Impact.** During construction, the use of water for dust suppression would be minimal and short-term, and would not be in volumes or flow rates that would affect water treatment plant capacities. Landscaping and irrigation would be established around the full perimeter of the substation after the perimeter wall is constructed and water service is established. PacifiCorp would consult with the local jurisdiction to develop an appropriate landscaping plan. The use of water for landscape irrigation during operation would be minimal; therefore, irrigation water use would not be in volumes that would affect water treatment plant capacities. Therefore, construction and operation of the proposed Project would not require the expansion of water facilities serving the area, and thus no impact would occur.

c) **Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**No Impact.** The grading plan for the proposed Lassen Substation site and the SWPPP would be designed to control the discharge of stormwater runoff from the site, which currently flows into existing drainage. Site design BMPs would be installed within the enclosed substation to reduce and control post-development runoff rates, and source control BMPs would be incorporated into the site plans to reduce the potential for stormwater runoff.

The proposed Lassen Substation site would also be surfaced with gravel as a source control BMP, which would reduce stormwater runoff. The remaining portion of the site would maintain its existing drainage pattern. Therefore, construction and operation of the proposed Lassen Substation site would not require the construction of new stormwater drainage facilities or the expansion of existing facilities.

As a result, construction and operation of the proposed Project would not require construction of new stormwater drainage facilities or expansion of existing facilities in the area. No impact would occur.

- d) **Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

**Construction Impacts**

**Less than Significant Impact.** The use of water for dust suppression, clean up, drinking and hand washing during construction of the proposed Project would be minimal, most likely brought to the construction sites by water trucks, and would not be in volumes that would affect water supplies. Restroom facilities for the proposed Project would be portable and would not require a connection to the local water supply system. Construction of the proposed Project would have a less than significant impact to the water supply in the area.

**Operation Impacts**

**Less than Significant Impact.** The use of water for landscape irrigation during operation would be minimal; therefore, irrigation water use would not be in volumes that would affect water supplies. It is anticipated that restroom facilities for the proposed Project, during both construction and operation, would be portable and would not require connection to the local water supply system. Personnel would be on site occasionally for routine maintenance and emergency repair purposes during operation of the proposed substation.

Operation of the proposed Project would have a less than significant impact to the water supply in the area.

- e) **Result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

**No Impact.** Construction and operation of the proposed Project would not discharge large volumes of wastewater to a wastewater treatment facility that would exceed its capacity. A portable chemical unit (portable restroom) would be placed within the substation perimeter wall for use during construction and operation of the proposed Project, and maintained by an outside service company. Therefore, wastewater would not be discharged during construction of the proposed substation site. Similarly, wastewater would not be discharged to the sewer system during construction. Therefore, construction and operation of the proposed Project would have no impact to wastewater treatment providers in the area.

- f) **Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?**

**Construction Impacts**

**Less than Significant Impact.** Construction of the proposed Project would result in the generation of various waste materials, many of which can likely be recycled and salvaged. Waste items and materials would be collected by construction crews and separated into roll-off boxes at the materials staging areas. All waste materials that are not recyclable would be categorized by PacifiCorp in order to ensure appropriate final disposal. Non-hazardous waste would be transported to local waste management facilities, and, if any hazardous waste is identified for disposal (e.g., potentially the removed wood poles), it would be disposed of in a Class I hazardous waste landfill or in the lined portion of an RWQCB-certified municipal landfill, as appropriate. Hazardous liquid materials, such as mineral oil, would be subject to the developed SPCC Plan, which incorporates features such as trenches or berms to contain spills, should they

occur. Soil excavated for the proposed Project would either be used as fill or disposed of off-site at an appropriately licensed facility.

Although there would be waste generated from construction activities that would be sent to landfills in the area, the amount is not anticipated to be large enough to affect the permitted capacity of a landfill. The proposed Project would be served by a landfill with sufficient capacity to accommodate the Project's solid waste disposal needs. Currently, the Yreka solid waste landfill, which is the landfill closest to the proposed substation site, possesses over 66 percent of available remaining capacity. Impacts related to landfill capacity would be less than significant.

### **Operation Impacts**

**Less than Significant Impact.** Operation of the proposed Project would consist of routine maintenance and emergency repair of the facilities, and these activities would not generate waste in an amount that would affect the permitted capacity of landfills in the area. The proposed Project would be served by a landfill with sufficient capacity to accommodate the Project's solid waste disposal needs. Currently, the Yreka solid waste landfill, which is the landfill closest to the proposed substation site, possesses over 66 percent of available remaining capacity. Impacts related to landfill capacity would be less than significant.

#### **g) Comply with federal, state, and local statutes and regulations related to solid waste?**

**No Impact.** Construction of the proposed Project would comply with federal, State, and local statutes and regulations related to solid waste. The proposed Project includes the removal and disposal of treated wood poles, and these wood poles would be disposed of in a Class I hazardous waste landfill, or in the lined portion of an RWQCB-certified municipal landfill.

Operation of the proposed Project would consist of routine maintenance and emergency repair. These activities are not expected to generate solid waste subject to federal, State, or local statutes or regulations related to solid waste. As a result, no impact to federal, State, and local statutes and regulations related to solid waste would occur.

## 4.18 Mandatory Findings of Significance

Does the project:	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	X	<input type="checkbox"/>
b) Have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X
c) Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	X

Does the Project:

- a) **Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

**Less than Significant Impact.** The Project would result in impacts to sensitive species and their habitats and to federally protected wetlands, and would potentially interfere with the movement of native resident or migratory species; however, with implementation of mitigation measures described in Section 4.5, Biological Resources, these impacts would be minimized to a less than significant level, and would not result in degradation of the environment or substantial habitat reduction of sensitive species, cause reduction or elimination of populations or communities, reduce the number or range of any plant or animal, or affect important cultural resources.

- b) **Have Impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?**

**No Impact.** Construction and operation of the Project would have individual impacts that are less than significant after implementation of mitigation; however, cumulative analysis of these impacts with reference to present and reasonably foreseeable projects within the vicinity indicates the Project is unlikely to result in cumulatively considerable impacts to the environment within the Project area.

- c) **Have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

**No Impact.** The proposed Project would increase transmission capacity in the City of Mt. Shasta area, to continue providing safe and reliable electric service to customers in the area, in addition to meeting contractual needs. Construction and operation of the Project would not result in substantial direct or indirect adverse effects on human beings, and no impact would occur.

## 5.0 CUMULATIVE ANALYSIS

### 5.1 Introduction

This section analyzes cumulative impacts, defined as two or more individual affects that, when considered together, are considerable or that compound or increase other environmental impacts. The cumulative impact is the change in the environment that results from the incremental impact of the Project when viewed in connection with other related past, present, and reasonably foreseeable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time (CEQA Guidelines, Sec. 15355; Public Resources Code Sec. 21083 b).

This PEA examines the potential cumulative impacts of the Project in relation to other existing and likely future projects in the study area (see Table 5-1). This analysis determined that there is not likely to be any significant cumulative change in the environment resulting from the incremental impact of the proposed Project when added to these other developments. Consequently, the proposed Project is not expected to result in or contribute to significant cumulative impacts.

CEQA Guidelines Section 15130(b) identifies the following three elements that are necessary for an adequate cumulative analysis:

- A list of past, present, and reasonably anticipated future projects producing related or cumulative impacts, including those projects outside the control of the Lead Agency; or a summary of projections contained in an adopted General Plan or related planning document designed to evaluate regional or area-wide conditions.
- A summary of expected environmental effects to be produced by those projects. The summary shall include specific reference to additional information stating where that information is available.
- A reasonable analysis of the cumulative impacts of the relevant projects, and an examination of reasonable options for mitigating or avoiding any significant cumulative effects of a proposed project.

### 5.2 Methodology

To conduct this analysis, various agencies—including the planning staff from Siskiyou County, City of Mt. Shasta, and Caltrans—were contacted for a listing of reasonably foreseeable projects within the proposed Project area. Only one project was identified and is currently under construction.

**TABLE 5-1 PRESENT AND REASONABLE FORESEEABLE PROJECTS WITHIN THE PROPOSED PROJECT AREA**

PROJECT NAME	RESPONSIBLE AGENCY	LOCATION / DESCRIPTION	FISCAL YEAR
Mt. Shasta Sewer Line Improvement Project	City of Mt. Shasta	Within and immediately west of the City of Mt. Shasta	2015*

\*Estimated start date.

## **5.3 Analysis of Cumulative Impacts**

### **5.3.1 Aesthetics**

The Mt. Shasta Sewer Line Improvement Project listed in Table 5-1 is located west of the City of Mt. Shasta in Siskiyou County. It is located in the immediate vicinity of the existing Mt. Shasta Substation, the proposed Lassen Substation site and adjacent to the proposed transmission/distribution line upgrade. The proposed Project is anticipated to have less than significant impacts on the overall visual character of the surrounding area. The proposed Project would be constructed within PacifiCorp's existing ROW and the substation site would be screened from most direction with existing vegetation. Individually, the Project would result in less than significant impacts related to scenic vistas, scenic highways, the visual quality of the surrounding area, and the creation of light and glare. However, these impacts, although individually less than significant, may be considered cumulatively significant if they would make a considerable contribution to what would be deemed a significant adverse visual effect resulting from the combined effects of the Project and other past, present, and reasonably foreseeable projects in the Project vicinity.

Cumulative impacts to aesthetic resources would occur if the proposed Project, in combination with other known future projects, created a significant impact that might otherwise be considered individually less than significant. However, because the proposed Project would not alter the visual character of the Project area or significantly affect existing scenic vistas, it would not contribute to a cumulative impact to aesthetic resources in the vicinity. Therefore, the Project would not contribute to significant cumulative impacts on visual resources in the Project area.

### **5.3.2 Agriculture and Forestry Resources**

A significant cumulative impact to agriculture or forestry resources would occur if the impacts to these resources created by the proposed Project, even if individually less than significant, would make a considerable contribution to a cumulatively significant impact when considered together with similar impacts created by other past, present, and reasonably foreseeable future projects. Individually, the Project would result in no impacts to agricultural lands or Farmland or Williamson Act Contracts; the Project would result in a less than significant impact related forestry resources. Therefore, the Project would not contribute to a potential cumulative impact to agricultural or forestry resources impacts in the Project area.

### **5.3.3 Air Quality**

Air quality impacts from construction of the proposed Project would be temporary and implementation of APM AQ-1 would ensure impacts would be less than significant through standard dust control and other BMPs. It is assumed that other projects, including the Mt. Shasta Sewer Line Project listed in Table 5-1, would be subject to similar dust control measures and regulatory controls. The Project would comply with all federal, State and local air quality regulations, guidelines and permitting requirements. There would be no long-term significant air emissions associated with the Project. Therefore, the Project would not contribute to significant cumulative air quality impacts in the Project area or region.

### **5.3.4 Biological Resources**

The proposed Project has been designed to minimize potential environmental impacts through APMs BIO-1 through BIO-11. Construction, operation, and maintenance of the Project would result in temporary and permanent impacts to vegetation. Overall, however, the construction of the Project

would temporarily disturb or alter native vegetation, and recovery of these communities is expected to occur. It is unlikely that the proposed Project would have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status plant species. The Project would not contribute significantly to cumulative effects upon botanical resources.

Cumulative effects upon terrestrial wildlife resources are typically additive and directly proportional to the total area of habitat disturbance. The nature of these effects is also dependent upon the timing and duration of disturbances, and whether projects result in the temporary or permanent displacement of wildlife. It is unlikely that the proposed Project will have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species. While construction may result in the temporary disturbance of individual animals in the vicinity of the Project area, this will be a short-term effect.

It is anticipated that the proposed Project combined with the project listed in Table 5-1 would not have cumulatively significant or considerable impacts. Because the project listed in Table 5-1 would be subject to the same federal, State, and local regulations and would incorporate the feasible mitigation measures to reduce significant biological impacts. Therefore, the Project would not contribute to significant cumulative biological resources impacts in the Project area.

### **5.3.5 Cultural Resources**

The Project would not contribute to significant cumulative impacts on cultural or paleontological resources in the area. Impacts of the proposed Project on known cultural resources would be less than significant. Impacts on unknown cultural resources (sites or artifacts that could be discovered during construction) would be mitigated as needed. Therefore, the Project would not contribute to significant cumulative impacts on cultural resources in the area.

### **5.3.6 Geology and Soils**

The Project would result in less than significant impacts, relative to soil and geologic resources. While geotechnical impacts may be associated with other developments in the Project area, by the very nature of the impacts (e.g., unstable soil units, expansive soils, seismic hazards, and soil erosion), the constraints are site-specific and would be addressed on a project-specific basis.

Relative to these site-specific impacts, the proposed Project and the project listed in Table 5-1 would be required to comply with the applicable State and local requirements including, but not limited to, the California Building Code and local building codes. Also, seismic impacts are a regional issue and are addressed through compliance with applicable codes and design standards. Thus, individual projects do not increase the potential for a seismic event or represent cumulatively significant impacts to geologic and soil resources following a seismic event, as the effects would be based on site-specific underlying conditions and proximity to the source of the seismic event. Therefore, the Project would not contribute to significant cumulative impacts related to geology, soils, or seismicity in the area.

### **5.3.7 Greenhouse Gas Emissions**

GHG emissions resulting in anthropogenic climate change are considered a global effect, such that the analysis of GHG is—by its very nature—an analysis at a cumulative impacts level. The proposed Project is expected to have a less than significant impact on the environment through the minor generation of GHG emissions during construction, and would only temporarily contribute to the cumulative effect on GHG from other projects in the Project area. Furthermore, the proposed

Project's operation would not require the combustion of fossil fuels; therefore, the proposed Project's cumulative impact on GHG is less than significant.

### **5.3.8 Hazards and Hazardous Material**

The Project would result in less than significant impacts to hazards and hazardous materials with implementation of several APMs and compliance with public laws and regulations that address the handling of hazardous materials. The cumulative project, listed in Table 5-1, could involve the storage, use, disposal, and transport of hazardous materials to some degree during construction and operation, and together would involve an incremental increase in use of such materials. However, this project is not specifically associated with production and manufacturing of hazardous materials or the production of other incidental hazardous materials as a by-product of site activity. Also, the cumulative project would be subject to existing agency laws and regulations that address the handling and accidental release of hazardous material. These existing laws and regulations would ensure that the incremental effects of the Project, when considered together with the effects of the cumulative project, would not create a cumulatively considerable hazard to the public or environment related to the handling or accidental release of hazardous materials.

The Project is in an area mapped as Very High Fire Hazard. The proposed Project would result in a less than significant impact relative to wildfire. It is anticipated that the project listed in Table 5-1 would employ standard protocols to reduce the risk of fires during construction and operation, and would be required to comply with applicable wildland fire management plans and policies established by State and local agencies. There would be no cumulatively significant impact related to an increased risk of wild fire in the vicinity of the proposed Project. Therefore, no cumulative impacts wildland fires would result.

Regardless, the proposed Project would comply with applicable wildland fire management plans and policies established by State and local agencies. Based on compliance with applicable regulations and with implementation of BMP-8, Fire Management and Protection Plan, and BMP-9, Emergency Action Plan, the proposed Project is not expected to expose people or structures to a significant risk of loss, injury, or death involving wildland fires. Therefore, impacts would be less than significant.

### **5.3.9 Hydrology and Water Quality**

Construction, operation and maintenance of substation and transmission/distribution line facilities can create temporary and permanent impacts to water resources and wetlands. Potential impacts to water resources and wetlands can result from accelerated erosion and sedimentation from the construction and maintenance activities on or adjacent to streams or wetlands. Other impacts can include water quality degradation, and decreased wetland size, function, or value. Potential impacts to wetlands and other aquatic resources would be less than significant. The project listed in Table 5-1 would be subject to the same federal, State, and local regulations regarding drainage plans and flooding potential and would typically be required to draft and implement a SWPPP with specific provisions that address erosion and sedimentation control during construction and operation. These impacts would be localized and controlled at the source and would not be considerable in relation to other cumulative projects. The Project would not contribute to cumulative effects upon surface water or wetland resources in the Project area.

The Project would not place housing within a 100-year floodplain; would not place structures in an area that would impede or redirect flood flows; would not expose people or structures to inundation from failure of a dam or levee; and would not result in inundation due to seiche, tsunami, or

mudflows. Therefore, the Project would not contribute to a potential cumulative impact in relation to these effects.

### **5.3.10 Land Use and Planning**

The Project would not result in impacts related to dividing an established community or conflict with applicable land use plans, policies, or regulations. The Project would result in less than significant impacts related to a habitat conservation plan or natural community conservation plan area. Therefore, the Project would not contribute to significant cumulative impacts related to land use in the area.

### **5.3.11 Mineral Resources**

The proposed Project would not result in impacts to mineral resources in the Project area or region; therefore, the Project is not likely to be any significant cumulative change in mineral resources from the incremental impact of the proposed Project when added to existing or future projects.

### **5.3.12 Noise**

As the Project would replace an existing substation and wood poles for an existing transmission line, corona and electrical effects are expected to be similar. The addition of approximately 200 feet of transmission line to connect to Line 2 would not result in an appreciable increase in corona and electrical effects. A short span of conductor (300 feet) would be installed underground to connect the Lassen Substation with two distribution lines. Thus, the Project is not expected to contribute to significant cumulative effects related to corona (e.g., audible and radio noise) and electrical effects (e.g., electrical field induction and induced currents) in the study area.

Noise impacts from construction would be temporary and less than significant. Once constructed, the Project would not significantly increase ambient noise levels in the Project area, and thus would not contribute to significant cumulative noise impacts in the study area.

### **5.3.13 Population and Housing**

The increased demand for workers for construction of the proposed Project would be temporary, and therefore would not induce substantial population growth in the area. In general, workers are expected to be drawn from the local labor pool. The proposed Project may require temporary accommodations for construction workers during construction. However, this need is anticipated to be met by hotels and motels in the vicinity of the proposed Project, as there are a number of hotels and motels available primarily in the cities of Mt. Shasta and Weed. Therefore, no new housing would need to be built for temporary construction workers. The project listed in table 5-1 is not expected to result in any impact to population and housing in the Project area; thus, the Project is not expected to contribute to significant cumulative effects related to population and housing in the study area.

### **5.3.14 Public Services**

Short-term construction activities would not require the expansion of fire protection, police protection, schools, parks, or other public facilities. Although the proposed substation site is classified as a very high fire hazard, proper fire-safety protocols and standards would be followed during construction of the substation, and it is not expected that the Project would require an increase in fire suppression activities by the Mt. Shasta Fire Protection District or the Mt. Shasta Fire Department. As workers are generally expected to be drawn from the local labor pool, the number of construction

workers is not expected to substantially increase the demand for public services. Therefore, the Project would not contribute to significant cumulative impacts related to public services.

### **5.3.15 Recreation**

The Project is not expected to increase the use of existing recreational facilities or cause substantial deterioration of the facilities, as construction and operation of the proposed Project would not cause population growth that would result in increased use of recreational facilities. Therefore, the Project would not contribute to significant cumulative impacts related to recreation in the study area.

### **5.3.16 Transportation and Traffic**

Transportation and traffic impacts during Project construction (e.g., traffic control, temporary lane closures) would be temporary and less than significant. The project listed in Table 5-1 is in the immediate Project area. Temporary short-term impacts may occur in conjunction with the construction of the Mt. Shasta Sewer Line Improvement Project. However, the proposed Project would implement a Traffic Management Plan and would coordinate with local agencies to control traffic. It is assumed the Mt. Shasta Sewer Line Improvement Project would also be required to implement a traffic control plan. Through implementation of traffic management plans and coordination efforts, transportation and traffic impacts during construction would be less than significant. The Project would not contribute to any long-term significant cumulative transportation or traffic impacts in the study area.

### **5.3.17 Utilities and Service Systems**

The Project would result in less than significant impacts related utilities and service systems. Therefore, the Project would not contribute to a potential cumulative impact in relation to these services and utilities. Like PacifiCorp, most other energy and utility providers plan infrastructure upgrades incrementally to accommodate planned growth in their service areas, based on adopted city/county general plans. The proposed Project would accommodate the current and planned growth, but would not itself induce growth; thus, the Project would not contribute to significant cumulative impacts on energy and utilities in the area.

## **5.4 Conclusion**

There is not likely to be any significant change in the environment resulting from the incremental impact of the proposed Project when added to other existing or reasonably foreseeable future projects in the study area.

## 6.0 DETAILED DISCUSSION OF SIGNIFICANT IMPACTS

### 6.1 Mitigation Measures Proposed To Minimize Significant Effects

The environmental impacts of the proposed Lassen Substation Project are discussed in Sections 4.2 through 4.17 of this Proponent's Environmental Assessment. Applicant Proposed Measures (APMs) identified in Table 3-1 would be implemented to reduce or avoid potential environmental impacts that could result from construction and operation of the proposed Project. These APMs are specific design elements that would be implemented by PacifiCorp and have been incorporated into the proposed Project to prevent the occurrence of or minimize the significance of potential environmental effects. Therefore, no unavoidable significant environmental impacts were identified for the proposed Project.

### 6.2 Description of Project Alternatives and Impact Analysis

This section of the Proponent's Environmental Assessment (PEA) compares the construction and operation of PacifiCorp's proposed Lassen Substation and associated transmission/distribution line upgrade (proposed Project) with its alternatives. Section 15126.6 (d) of the California Environmental Quality Act (CEQA) Guidelines requires that an environmental impact report (EIR) include "sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the [P]roposed [P]roject." Although a PEA document is not an EIR, this chapter summarizes the relative impact of each alternative to the preferred alternative for each CEQA environmental issue area.

The Proposed Project Objectives, provided in Section 3.3: Project Objectives, are as follows:

- **Replace the deteriorated Mt. Shasta Substation:** to ensure the reliability of the system, the existing wood structure substation would be replaced with a new steel pole constructed substation at the proposed Lassen Substation site.
- **Meet electrical system demand:** to ensure that the system has adequate capacity to safely and reliably meet local and contractual system demand.
- **Meet future transmission conversion needs:** the new substation and upgraded poles would be designed and built to accommodate operating within a 115 kV transmission system; which is the proposed, and in many locations is the current, voltage for the surrounding PacifiCorp electrical system in the region.
- **Complete Project by December 2017:** to be operational to meet the projected summer peak loads of 2018.

General Order No. 131-D requires that an Application for a Permit to Construct (PTC) include the "[r]easons for adoption of the power line route or substation location selected, including comparison with alternative routes or locations, including the advantages and disadvantages of each."

PacifiCorp has evaluated two site alternatives for the proposed Project, Alternative Site 1 and Alternative Site 2. Alternative Site 2 includes the preferred location of the proposed Lassen Substation and is analyzed in Chapter 4.0, Environmental Impact Assessment of this PEA.

Alternative Sites 1 and 2 both include the construction of 200 feet of new 115 kV above-ground transmission line (operated at 69 kV), construction of 300 feet of new 115 kV underground transmission line (operated at 69 kV), upgrade of 36 existing transmission poles, installation of three new poles, upgrade two distribution lines, and install approximately 1,200 feet of underground cable to increase capacity of an existing underground distribution line.

## 6.2.1 Alternatives to the Proposed Project

PacifiCorp identified two feasible locations to site the Lassen Substation. These alternative sites, along with the No Project Alternative, are evaluated below.

### **Alternative Site 1**

Alternative Site 1 (Site 1) would include the expansion of the existing substation at its current location (see Figure 3-4). This alternative would require the purchase of either one acre of wetland belonging to the Morgan-Merrill Wetlands Mitigation Site (north/northeast) or one acre of unused, inactive pasture land that is vegetated with non-native grasses (southeast).

Expanding to the north/northeast of the existing substation would be infeasible due to the wetlands and their status as a mitigation site. Expanding the substation to the southeast into the pasture land would likewise be infeasible due to the dimensions and limited size of the parcel, which would prevent construction of the new, larger substation.

Surrounding land uses include forested emergent and scrub-shrub wetlands to the north and west, as well as two residences and Old Stage Road to the west. Lands to the south and southeast of the site support unused fenced pasture land and two residences.

### **Alternative Site 2 (Preferred Alternative)**

Alternative Site 2 (Site 2) would consist of two parcels adjacent to the existing Mt. Shasta Substation to the east, with a combined area of 4.5 acres. Each site supports a mixture of native and non-native (landscape) vegetation, and each parcel is currently occupied by one residence and assorted outbuildings. Access would be via an existing gravel driveway leading from South Old Stage Road. The 0.5-mile access road is unpaved, and would be upgraded to an all-season roadway with Project implementation. The first parcel (504 South Old Stage Road) is available for sale, with PacifiCorp holding an option for sale on the second parcel (506 South Old Stage Road).

Site 2 would be visible from Old Stage Road as well as the two residences to the west. However, Site 2 would be located farther from South Old Stage Road than Site 1 and screened to the extent feasible by existing trees and vegetation.

### **No Project Alternative**

As required under CEQA, a No Project Alternative is required to be analyzed. Under this alternative, no action would be undertaken and the existing Mt. Shasta Substation would remain in operation in its current state.

### *Alternatives Eliminated from Further Consideration*

PacifiCorp initially identified five additional locations for the Lassen Substation site. However, while these locations were considered, they were eliminated from further analysis because they were determined to not be feasible or result in greater environmental impacts than Site 1 and Site 2. Below is a brief discussion of each of the five alternative site locations.

Site 3 is 30.8 acres of pasture land that are vegetated with non-native grasses located to the west of Old Stage Road, 0.2 mile south of the existing Mt. Shasta Substation. This site is directly adjacent to the existing 69 kV transmission line. Surrounding land uses include a single residence and barn to the

north, and rural residences and pasture land to the south, east, and west. This alternative would result in visual impacts by obstructing views of Mt. Shasta.

Site 4 is 14.5 acres located 0.2 mile north of the existing Mt. Shasta Substation. There are an abandoned residence, barn, and outbuilding on the site. This site is not directly adjacent to the 69 kV transmission line and would require 500 feet of line to connect. Surrounding land uses include single residence to the north, a scrub-shrub wetland and streambed to the south and east, and pasture land to the west. An apiary is located on the western edge of the site. Old Stage Road runs adjacent to the site on the east. This alternative would result in visual and wetland impacts.

Site 5 consists of two parcels, 17.7 and 22.9 acres respectively. Both parcels support mixed conifer forest, and the second parcel also supports a fenced horse pasture directly adjacent to the 69 kV transmission line. This alternative would require an upgrade to 0.4 mile of the existing access road to convert it to an all-season surface, and clearance of approximately 1.5 acres of conifer forest. Surrounding land uses include active horse pasture and three residences within 0.1 mile northeast of the site. This alternative would result in visual and biological impacts.

Site 6 is 22.3 acres of pasture land that supports mixed conifer forest and non-native grasses. This alternative would require an upgrade of 0.5 mile of the existing access road to convert it to an all-season surface, and clearance of approximately 0.75 acre of conifer forest. This site is not directly adjacent to the 69 kV transmission line and would require 200 feet of line to connect. Surrounding land uses include forested wetlands and Big Springs Creek, which supplies water to the Mt. Shasta Fish Hatchery, operated by the California Department of Fish and Game (CDFG). This alternative would result in visual, biological, wetland, and water quality impacts.

Site 7 comprises two parcels, 5.8 acres and 3.1 acres respectively. Both parcels consist of active pasture land that supports non-native grasses. Specifically, the site is located at the end of Smith Road, south of Lassen Lane on the west side of I-5. The site is not directly adjacent to the 69 kV transmission line and would require 900 feet of line to connect. Surrounding land uses include one residence 500 feet north of the site, pasture to the north and south, I-5 and Mercy Medical Center Mt. Shasta to the east, and emergent wetland to the west. This alternative would result in visual and wetland impacts.

## **6.2.2 Alternative Impact Analysis**

### **Alternative Site 1**

Alternative Site 1 would include expansion of the existing Mt. Shasta Substation in its current location (see Figure 2-2). This alternative would require the purchase of either one acre of wetland belonging to the Merrill-Morgan Wetlands Mitigation Site or one acre of inactive pasture land to the southeast. This alternative is potentially feasible and would meet the Purpose and Need and the Project Objectives as discussed in Section 2.3.

#### ***Impact Analysis***

##### **Aesthetics**

Would the Project Alternative 1:

a) **Have a substantial adverse effect on a scenic vista?**

**Less than Significant Impact.** There are no designated scenic vistas as identified in the Siskiyou County General Plan or the City of Mt. Shasta General Plan. However, scenic vistas do occur from key Viewpoints of areas generally identified as visual resources in these plans, such as Mt. Shasta and Black Butte. However, because of the locations of these vistas, the visual contrasts created by Alternative 1, the difference in scale and dominance of the Alternative, the distance at which the contrasts are viewed, and preservation of the lines of sight to these resources, this Alternative would not adversely affect these scenic vistas.

b) **Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**Less Than Significant Impact.** As stated in Section 4.2.2 of this PEA, the Alternative site is located in an area that is considered a Scenic Highway Corridor. There are no scenic resources, such as significant trees, rocks, historic buildings, or prominent topographic features that would be degraded due to construction of the Alternative. In relative context of the diminutive scale of the proposed Alternative to the intervening terrain and surrounding vegetation, the Alternative would be a middleground view and not be obvious, dominate or even attract intermittent views from the highway. Therefore, no substantial adverse effects on scenic resources would occur.

c) **Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less Than Significant Impact.** The Alternative site is located within open grassland and pasture character area surrounded by mixed coniferous forest and oak woodland vegetation. The visual character and quality of the area's landscape is pleasing, yet common. The new substation would be located on the site of the existing substation, with direct views primarily from vehicles passing the site on South Old Stage Rd. The Alternative would consist of structures of 15 to 20 feet in height, with some reaching up to 40 feet in height, but contrasts would be moderate and would not disrupt or dominate the existing viewshed. The existing visual character of the low density, pastoral landscape in the substation area and along the existing transmission line is already influenced by the existing facilities; therefore, the character or quality of the site and its surroundings would not be substantially degraded by implementation of this Alternative.

d) **Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**Less Than Significant Impact.** The substation would require minimal lighting for security purposes, activated by motion sensors; however, no new significant light sources would be introduced. Lighting would be directed downward at the site. There would be no permanent additional light sources as a result of the Alternative, and therefore no substantial impacts related to light and glare in the area would occur. Routine construction, operation, and maintenance work would be performed during the day. However, there may be instances when nighttime emergency maintenance is necessary, and lighting for security and to maintain a safe working environment would be required. In these instances, the lighting would be directed toward the work areas requiring illumination and away from motorists and residences.

### **Agricultural and Forestry Resource**

Would the Project Alternative 1:

- a) **Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to nonagricultural use?**

**No Impact.** The Alternative site is not located within an area identified as *Farmland* by the FMMP, and therefore, would not convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural uses.

- b) **Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

**No Impact.** The Alternative site is zoned for rural residential and agricultural uses, and this Alternative would not result in a conflict with any agricultural zone districts or uses. The Alternative site is not restricted by a Williamson Act contract.

- c) **Conflict with existing zoning for, or cause rezoning of, forest land (as defined in PRC section 12220(g)), timberland (as defined by PRC section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?**

**No Impact.** This Alternative would require a use permit to allow for a new electrical substation facility on lands zoned for rural residential and non-commercial agricultural uses. No rezoning of forest lands or timberland zoned Timberland Production is proposed.

- d) **Result in the loss of forest land or conversion of forest land to non-forest use?**

**Less than Significant Impact.** Due to the minimal amount of land needed for the proposed use, this Alternative is not anticipated to result in a substantial loss of forest lands to a non-forest use. Prior to earth-disturbing activities that may result in the removal of trees, PacifiCorp would need to adhere to the requirements of the Z'berg-Nejedly Forest Practice Act of 1973. Timber operations involved with the Alternative would need to be approved by Cal Fire, and a Timber Conversion Permit may be required. If so, conditions of approval would be incorporated into the use permit to ensure that PacifiCorp adheres to State regulations.

- e) **Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?**

**Less than Significant Impact.** Due to the minimal amount of land needed for the proposed use, this Alternative is not anticipated to result in a substantial loss of forest land or farmland (Farmland of Local Importance) to a non-forest or non-agricultural use.

## **Air Quality**

Would the Project Alternative 1:

- a) **Conflict with or obstruct implementation of the applicable air quality plan?**

**No Impact.** Siskiyou County has not adopted CEQA significance criteria for air quality. There are no numeric thresholds established for emissions from construction. The SCAPCD has adopted thresholds for stationary sources under its New Source Review rule for requiring best available control technology (BACT) and an air quality impact assessment. Those thresholds indicate that further analysis is required if a source's emissions exceed 2,500 lbs/day for CO and 250 lbs/day

for all other criteria pollutants. These thresholds were used to evaluate the significance of impacts from the proposed Lassen Substation.

The ARB recommended the use of a threshold of 10,000 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) emissions as a significance threshold for projects in their Climate Change Proposed Scoping Plan, which was approved by the ARB's Board in January 2009. Other agencies have used a threshold of 10,000 metric tons of CO<sub>2</sub>e as a significance threshold under CEQA for industrial projects. This threshold was used to evaluate the significance of GHG emissions from the Lassen Substation. Construction and operation of the Alternative would therefore not conflict or obstruct implementation of the applicable air quality plan.

**b) Violate any air quality standards or contribute substantially to an existing or projected air quality violation?**

**No Impact.** The Alternative would include construction of the substation, along with installation of an additional 200 feet of transmission line and replacement of approximately 36 transmission poles. Replacement of the transmission poles would occur simultaneously with the substation construction under both the proposed Project and Alternative scenarios.

As shown in Table 4.4-3 (Section 4.4.4), emissions would be below emission thresholds, and construction of the Alternative would not result in a significant air quality impact. Construction of the Alternative would therefore not violate any adopted air quality standards or result in a cumulatively considerable increase in any nonattainment pollutants.

**c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is classified as non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?**

**Less than Significant Impact.** Emissions during operation of the Alternative would be confined to emissions from vehicles associated with inspection and maintenance of the substation. Emissions would be lower than emissions associated with construction as presented in Table 4.4-3. Operational emissions would therefore not violate any adopted air quality standards or result in a cumulatively considerable increase in any nonattainment pollutants.

Construction of the Alternative would result in temporarily increased emissions of fugitive dust during grading activities. Fugitive dust emissions would be controlled through implementation of standard dust control measures, and would be less than significant.

**d) Expose sensitive receptors to substantial pollutant concentration?**

**No Impact.** As stated above, construction and operation of this Alternative would not result in any violation of applicable air quality standards, including substantial pollutant concentrations to sensitive receptors, and no impact would occur.

**e) Create objectionable odors that would affect a substantial amount of people?**

**No Impact.** Operation of the proposed substation would not result in the creation of objectionable odors. During construction, emissions would be generated from vehicles and equipment, but these emissions would be temporary in nature and below any adopted air quality standards. In addition, construction would occur in a rural residential area, and would not affect a substantial number of people. No impact would occur.

## Greenhouse Gas Emissions

Would the Project Alternative 1:

- a) **Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?**

**Less than Significant Impact.** Project construction and operation have the potential to contribute GHG emissions and could contribute to global climate change impacts. Given the nature of the Project, the main source of GHGs would be from construction of the substation. Operational emissions are minor in comparison with construction emissions. Construction GHG emissions were estimated using the same approach as criteria pollutants, and are presented in Table 4.4-4. As shown in Table 4.4-4, total GHG emissions of 1,690 metric tons are below the 10,000 metric ton of CO<sub>2</sub>e threshold, and would not result in a cumulatively considerable contribution of GHG. Impacts would be less than significant.

- b) **Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**No Impact.** Siskiyou County has not adopted CEQA significance criteria for greenhouse gases. There are no numeric thresholds established for emissions from construction. The SCAPCD has adopted thresholds for stationary sources under its New Source Review rule for requiring best available control technology (BACT) and an air quality impact assessment. Those thresholds indicate that further analysis is required if a source's emissions exceed 2,500 lbs/day for CO and 250 lbs/day for all other criteria pollutants. These thresholds were used to evaluate the significance of impacts from the proposed Lassen Substation.

The ARB recommended the use of a threshold of 10,000 metric tons of carbon dioxide equivalent (CO<sub>2</sub>e) emissions as a significance threshold for projects in their Climate Change Proposed Scoping Plan, which was approved by the ARB's Board in January 2009. Other agencies have used a threshold of 10,000 metric tons of CO<sub>2</sub>e as a significance threshold under CEQA for industrial projects. This threshold was used to evaluate the significance of GHG emissions from the Lassen Substation, and potential impacts were found to be less than significant. Thus, construction and operation of the Alternative would not conflict with applicable plans, policies, or regulations for reducing emissions of greenhouse gases, and no impact would occur.

## Biological Resources

Would Project Alternative 1:

- a) **Have a substantial adverse effect, either directly or indirectly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

**Less than Significant Impact.** As with the proposed Project, the Alternative would be located in an area where sensitive wildlife species and sensitive plant species have potential to occur. These species would be impacted primarily through ground disturbing activities, vegetation trimming and clearance, and excess light and noise. Impacts would include disturbance or destruction of feeding, foraging, or nesting habitat, introduction of exotic weeds and pests, and harassment of wildlife through the introduction of new sources of light and noise. Implementation of APMs presented in Table 4.5-3 would avoid or minimize these impacts to a less than significant level.

- b) **Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?**

**Less than Significant Impact.** Vegetation clearing for access to pole sites and pole replacement has the potential to remove plants that may provide forage and cover for wildlife species. Removal of vegetation increases the potential for post-construction erosion. Invasive plants may compete with native vegetation for resources, and may also change the local fire regime. Invasive plant species may not be palatable alternatives for special-status species that utilize native vegetation in the area. With implementation of Applicant Proposed Measures Table 4 .5-3, impacts to vegetation would be less than significant.

- c) **Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

**Potentially Significant Impact.** Expansion of the existing substation would require vegetation clearing or filling of approximately one acre of riparian scrub and dry montane meadow wetlands if the expansion occurs to the east/northeast on adjacent property. Additionally, these wetlands are part of an existing wetland mitigation site, the Merrill-Morgan Wetland Mitigation Site. Implementation of mitigation measures would minimize disturbance to adjacent wetland areas, but would not reduce the area of wetland required to construct the proposed Lassen Substation. In addition, the area of wetland required for construction of this Alternative would exceed the 0.5-acre dredge and fill permitted by the Section 404 Nationwide 12 Permit; construction of this Alternative would require an Individual Permit.

The expansion of the existing Mt. Shasta Substation on adjacent property to the east/southeast would require the acquisition of the one-acre site located to the southeast of the Mt. Shasta Substation. This adjacent land is unused, inactive pasture land vegetated with non-native grasses. However, expansion in this area is infeasible due to the limited size and dimension of the parcel which prevents the construction of the new, larger substation.

Implementation of the APMs presented in Section 4.5.2 would not reduce the area of wetlands that would be permanently impacted through construction of this Alternative. Impacts to the wetlands surrounding the existing substation would be significant.

- d) **Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**Less than Significant.** The majority of the proposed Project would be located within open space areas, allowing free movement of wildlife species. Due to the relatively small size of the structures, the large spans between structures, and the open landscape, the Project as proposed would not interfere substantially with the movement of any wildlife species. During construction, temporary construction-related noise may have the potential to disrupt foraging, nesting, roosting, and denning activities for a variety of wildlife species. Wildlife species stressed by noise may temporarily disperse from habitat in the vicinity of the proposed Project, but would be anticipated to return to baseline levels once construction is completed. Impacts would be less than significant, and no mitigation would be required.

- e) **Conflict with any local policies or ordinances protecting biological resources, such as tree preservation policy or ordinance?**

**No Impact.** There are no known local policies or ordinances regulating lands located within the Project area; therefore, there would be no impact.

**f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?**

**No Impact.** There are no known local, regional, or state habitat conservation plans regulating lands located within the Project area; therefore, there would be no impact.

**Cultural Resources**

Would Project Alternative 1:

**a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?**

**No Impact.** The background research did not identify previously documented cultural resources within the Alternative site. No historical resources were found during the survey of pole locations. The existing Mt. Shasta Substation is not recommended eligible to the CRHR and is therefore not considered a historical resource under CEQA.

As proposed, substation construction and replacement of existing poles would not cross any known historical-period resources; therefore, this Alternative would not cause an adverse change to any historical resources. There is minimal potential for undiscovered cultural material beneath the surface.

**b) Cause a substantial adverse change in the significance of an archaeological resource as defined in California Code of Regulations Section 15064.5?**

**No Impact.** The background research did not identify previously documented archaeological resources. No archaeological resources were found during the survey of pole locations. An isolated historical-period section of pipe was located during the reconnaissance survey at the substation site; however, isolated finds are generally not eligible for listing on the CRHR. Furthermore, it does not meet the criteria under CEQA to be a unique archaeological resource. There is minimal potential for intact cultural material beneath the surface. No archaeological resources would be impacted by the Alternative.

**c) Directly or indirectly destroy a unique paleontological resource or site or unique geological feature?**

**No Impact.** There are no previously recorded or known paleontological resources, sites, or unique geologic features in the Project area. However, if areas of paleontological resources, sites, or unique geologic features are discovered during Project construction, mitigation measures to avoid and preserve these resources would be implemented to mitigate potential impacts to a less than significant level.

**d) Disturb any human remains, including those interred outside of formal cemeteries?**

**No Impact.** Neither the background research nor contact with the NAHC and tribal representatives identified previously documented human remains, nor was surface evidence identified during the reconnaissance survey. The substation site and poles are not the locations of any known burial ground. Therefore, it is unlikely that construction of the Alternative would

disturb any human remains. However, as with many examples of land disturbance, there is a potential to discover human remains, either historic or prehistoric. Project implementation would be subject to the regulations of the California Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98.

## Geology and Soils

Would Project Alternative 1:

a) **Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:**

- i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42?

**Less than Significant Impact.** There are no Alquist-Priolo special study zones within the Project area. The closest special study zones are located in the eastern part of Siskiyou County and to the southeast in Shasta County, over 50 miles away (Bryant and Hart 2007). No known, historically active faults are mapped nearby (Jennings 1994), and potential impacts related to surface rupture would be similar to existing conditions. Results of the geotechnical survey revealed that peak ground acceleration of the Alternative site is 0.293, based on utilization of the 0.2-second spectral acceleration employing a 2 percent probability of exceedance in 50 years (Earthquake Hazard Method). With a peak ground acceleration of 0.293, the Alternative site would receive a seismic qualification requirement of “moderate” (PSI 2011).

The Institute of Electrical and Electronics Engineers (IEEE) Standard 693-2005, Recommended Practice for Seismic Design of Substations, ensures electrical substation equipment shall be designed so that there would be neither damage nor loss of function during and after the seismic event. In addition, equipment shall maintain the correct operational state during the seismic event, with 5 percent damping (IEEE 2006). PacifiCorp standards require substations to be designed and equipped according to qualification requirements described in Standard 693-2005. This Alternative would be designed and equipped using these standards, and potential impacts related to the rupture of a known earthquake fault would be less than significant.

- ii. Strong seismic ground shaking?

**Less than Significant Impact.** The Alternative, like the proposed Project, is located in Seismic Zone 3 (UBC 1997); thus, it is anticipated that the Alternative site could be affected by strong seismic ground shaking. A peak ground acceleration of 0.1 to 0.2 g has a 10 percent chance of being exceeded in a 50-year period (Cao *et al.* 2003).

Facilities at the substation could be affected by strong ground shaking. Foundations and structures would be constructed in accordance with IEEE Standard 693-2005 and other relevant current building codes. The IEEE Standard 693-2005 provides recommendations for mitigating possible damage to substation equipment. Because PacifiCorp standards require substations to be designed and equipped according to qualification requirements described in Standard 693-2005, it is anticipated that little structural damage would occur from horizontal ground accelerations. Design-level geotechnical studies would be

performed as necessary to evaluate the potential for, and effects of, strong ground shaking, and the facilities would be designed and constructed in accordance with current code. As a result, potential impacts from strong ground shaking would be less than significant.

iii. Seismic-related ground failure, including liquefaction?

**Less than Significant Impact.** There are no Alquist-Priolo special study zones within the Project area. The closest special study zones are located in the eastern part of Siskiyou County and to the southeast in Shasta County, over 50 miles away (Bryant and Hart 2007). No known active faults are mapped nearby (Jennings 1994). No impacts from surface rupture are expected or likely.

Soil on the existing substation site comprises sandy silt underlain by silty sand with gravel, cobble, and boulders; in addition, geotechnical surveys revealed saturated soil and near-surface groundwater. These conditions are indicative of soils that have potential for seismic-related ground failure, such as liquefaction. Areas subject to liquefaction can also undergo subsidence. Liquefaction-induced lateral spreading usually occurs on mile slopes of 0.3 percent to 5 percent where wet, soft silt, soft clay, or loose sandy soils are present in proximity to a free face (Rauch 1997). The potential for lateral spreading appears to be high.

Project design would include excavation of soft or loose, wet soils and replacement with imported structural fill materials, such as well-graded sand and gravel materials that meet the grading specifications set forth by the Geotechnical Engineer (refer to Appendix E, *Preliminary Geotechnical Engineering Report*). Structural fill materials would be conditioned and compacted as specified by the Geotechnical Engineer. Substation foundations would be designed and constructed in accordance with appropriate IEEE, American Society for Civil Engineers (ASCE), and American Concrete Institute (ACI) standards. In addition, it is anticipated that the proposed structures could experience some settlement that could occur as the result of liquefaction, and would not be adversely affected. Potential impacts resulting from seismic-related ground failure would be less than significant.

iv. Landslides?

**Less than Significant Impact.** The existing substation site is on relatively level ground, and the potential for landsliding to affect the substation is considered low. The northern end of the Project, in proximity to pole 19/47, is potentially vulnerable to landslide resulting from access areas created for pole replacement or pull and tension sites. Where slopes are greater than 10 percent, no permanent access roads would be constructed and, upon Project completion, slopes would be restored to their original contours. In addition, erosion control BMPs would be installed during construction to minimize slope instability resulting from erosion. Impacts would be less than significant.

**b) Result in substantial soil erosion or the loss of topsoil?**

**Less than Significant Impact.** Soils disturbed during the construction process are subject to loss of vegetative cover, resulting in erosion onsite and sedimentation that would affect this Alternative or adjacent areas. The primary disturbance would occur in areas without existing access roads, where grading would occur for pulling and tensioning sites, and where grading would occur within the substation site. Development of site-specific erosion and sedimentation control plans as part of the SWPPP and implementation of BMPs designated therein would

reduce the potential impacts to less than significant. Plans would also include revegetation of temporarily disturbed areas.

Special consideration would be given to installation of waterbars or other drainage facilities on roads located where road grades are steeper than 5 percent. Project timing and implementation of standard BMPs for erosion and sedimentation control would result in less than significant impacts.

The Alternative site is located on relatively flat ground and susceptibility to erosion is considered low; however, with construction scheduling and implementation of standard BMPs for erosion and sedimentation control, impacts would be less than significant.

**c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?**

**Less than Significant Impact.** The Alternative site is located on geologic units derived from pyroclastic flow from Black Butte, 4.5 miles north of the Project, and on glacial deposits originating from Mt. Shasta. The Alternative would be located on soils derived from igneous, metamorphic, sedimentary, and volcanic rock. The Alternative would be located in an area that may be impacted by unstable geology in the form of volcanic hazards related to Mt. Shasta.

An eruption from Mt. Shasta could generate ash deposits that cover the Project area. An eruption could also generate lava flows, lahars, debris avalanches or debris flows. The probability that a lava flow will reach the Project area is considered high based on an assessment of Mt. Shasta by Hoblitt *et al.* (1987). The probability that a large eruption depositing thick layers of ash and pyroclastic deposits within about 30 miles of Mt. Shasta is reported as  $10^{-5}$  by Hoblitt *et al.* (1987). However, this Alternative would not add to that risk because the Alternative and the surrounding environment would run the same risk of loss of life and injury from volcanic eruption as exists currently.

The potential for an event with unavoidable adverse impacts is considered low and is no different than for existing conditions; thus, impacts would be considered less than significant.

**d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?**

**Less than Significant Impact.** Shrink-swell soil behavior is a condition in which soil reacts to changes in moisture content by expanding or contracting. The three natural soil types identified within the Project area have low to moderate clay contents. Two soils have a low to moderate shrink-swell potential. Expansive soils may cause differential and cyclical foundation movements that can cause damage and/or distress to overlying structures and equipment. Design-level geotechnical studies have been performed to evaluate the potential for, and effects of, expansive soils where necessary, and substation installations would be designed and constructed according to current building codes. Mitigation may include excavation of expansive soils and replacement with properly compacted structural fill, as described in aiii) above. As a result, potential impacts resulting from expansive soils would be less than significant.

e) **Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

**No Impact.** The Alternative would generate waste water, and would not involve the use of septic tanks or alternative waste water disposal systems. No impact would occur, and no mitigation would be required.

### **Hazards and Hazardous Materials**

Would Project Alternative 1:

a) **Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**Less than Significant Impact.** Construction of the Alternative would require the use of fuel and lubricants inside vehicles and equipment. Construction of the Alternative, as well as demolition of the existing Mt. Shasta Substation, would result in the generation of various waste materials that can be recycled and salvaged. Project-specific health and safety plans would require all waste material be disposed of in accordance with State and federal regulations, as described in Section 4.8.3, and impacts to the public or the environment through the routine transport, use, or disposal of hazardous materials would be less than significant.

During operation of the Alternative, routine inspections and emergency repair would require the use of fuel and lubricants inside vehicles and equipment. All transport of hazardous materials would be in compliance with applicable laws, rules and regulations, including the acquisition of required shipping papers, package marking, labeling, transport vehicle placarding, training, and registrations. As a result, impacts due to the routine transport, use, or disposal of hazardous materials would be less than significant.

b) **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

**Less than Significant Impact.** Construction of the Alternative would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. Due to the low volume and low toxicity of the hazardous materials that would be used during the construction of the Alternative, the potential for environmental impacts from hazardous material incidents is less than significant. All hazardous materials would be stored, handled and used in accordance with applicable regulations, and Material Safety Data Sheets would be made available at the construction site for all crew workers, as described in Section 4.8.3.

During construction activities for the Alternative, the potential for encountering and damaging subsurface utilities (e.g., a natural gas line) or structures (e.g., an underground storage tank) exists, which could result in a release of a hazardous material. Such incidents would be avoided by thoroughly screening for subsurface structures prior to starting subsurface work. Screening activities would include use of Dig Alert, visual observations, and the use of buried line locating equipment.

Construction of the Project at Alternative Site 1 would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, and impacts are less than significant.

c) **Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

**Less than Significant Impact.** Construction of the Alternative would require the limited use of hazardous materials, such as fuels, lubricants, and cleaning solvents. Due to the low volume and low toxicity of the hazardous materials that would be used during the construction of the Alternative, the potential for environmental impacts from hazardous material incidents is less than significant. All hazardous materials would be stored, handled and used in accordance with applicable regulations, as described in Section 4.8.3, and Material Safety Data Sheets would be made available at the construction site for all crew workers.

During construction activities for the Alternative, the potential for encountering and damaging subsurface utilities (e.g., a natural gas line) or structures (e.g., an underground storage tank) exists, which could result in a release of a hazardous material. Such incidents would be avoided by thoroughly screening for subsurface structures prior to starting subsurface work. Screening activities would include use of Dig Alert, visual observations, and the use of buried line locating equipment.

The proposed substation would be equipped with transformer banks that contain mineral oil that could leak or spill if the transformers were damaged from a seismic event, fire, or other accident scenarios. To minimize potential impacts in the event a transformer is damaged, the design of the proposed substation would provide secondary containment and/or diversionary structures or equipment to prevent discharge of an oil spill, as described in the SPCC Plan that would be prepared for the Alternative during final design. An SPCC Plan would be prepared and implemented by PacifiCorp before oil-containing equipment is brought to the Alternative site. Impacts would be less than significant.

Construction and operation of the Project on Alternative Site 1 would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment, and impacts are less than significant.

d) **Emit hazardous emissions or involve handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**No Impact.** There are no schools within 0.25 mile of Alternative Site 1; the nearest school is the private school, AM School, located approximately 0.5 mile from the Alternative site. PacifiCorp would adhere to all federal, State, and local laws in regard to hazardous waste materials containment, control, and transport. Project construction and operation is not expected to result in a release of hazardous emissions, substances, or waste, and there would be no impact.

e) **Be located on a site which is included on a list of hazardous materials site compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

**No Impact.** Based on the Phase I Environmental Site Assessment reports prepared by ENPLAN for the proposed Project (see Appendix F), Alternative Site 1 is not located on a known hazardous waste site. As a result, there would be no impact to the public or the environment from being located on a site included on a list of hazardous materials sites.

- f) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?**

**No Impact.** No known public use airport, as identified within the *Siskiyou County Airport Land Use Compatibility Plan, 2001*, is located within the vicinity of the Alternative site. The closest airport to the Project vicinity is the Dunsmuir Municipal-Mott Airport, located approximately four miles southeast of Alternative Site 1. In addition to the construction of the new substation, the Project would involve construction of electrical transmission poles with a maximum height of 75 feet. The Alternative, however, would not cross any compatibility zones associated with the Dunsmuir Municipal-Mott Airport and, therefore, would not conflict with the Plan. The Alternative would not result in the construction of structures or create a safety hazard for persons working in the Project area.

- g) **For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?**

**No Impact.** There are no private airstrips within two miles of the Alternative. Therefore, there would be no safety hazard for personnel during construction or operation of the Alternative, and no impact to people residing or working in the Project area.

- h) **Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**Less than Significant Impact.** In places where a Project component may require a land closure, construction activities would be coordinated with the local jurisdiction so as not to cause closure of any emergency access route. Flaggers may briefly hold traffic back for construction equipment, but emergency vehicles would be provided access even in the event of temporary road closures. Therefore, emergency access would not be impacted by construction of the Alternative because streets would remain open to emergency vehicles at all times during these activities. The impacts would be less than significant.

Siskiyou County has not adopted an Emergency Evacuation Plan or Response Plan. Electrical facilities, however, are typically considered critical facilities in emergency response plans, and every effort would be made by PacifiCorp to maintain electrical service during emergencies. As a result, operation of the Alternative would have no impact to emergency plans. Overall, impacts from construction and operation of the Project at Alternative Site 1 would be less than significant.

- i) **Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?**

**Less than Significant Impact.** Alternative Site 1 is located in an area mapped as Very High Fire Hazard. PacifiCorp has standard protocols that include measures to address smoking and fire rules, storage and parking areas, use of gasoline-powered tools, use of spark arresters on construction equipment, road closures, use of a fire guard, fire suppression tools, fire suppression equipment, and training requirements. Trained fire suppression personnel and fire suppression equipment would be established at key locations, and the personnel and equipment would be capable of responding to a fire within 15 minutes of notification. Portable communication devices (e.g., radio or mobile telephones) would be available to construction personnel.

In addition to these protective measures, the site would be grubbed of vegetation and graded prior to the staging of equipment, minimizing the potential for a construction vehicle to start a fire. During grubbing and grading, PacifiCorp's standard fire-prevention protocols, including the use of spark arresters on construction equipment, would minimize the potential for these activities to ignite fires. As a result, construction of the Alternative would have a less than significant impact to risk of loss, injury or death involving wildland fires.

The Alternative may pose a fire hazard if vegetation or other obstructions come into contact with energized electrical equipment. The Alternative would be constructed and maintained in a manner consistent with CPUC GO-95 and CPUC GO-165. Consistent with these and other applicable State and federal laws, PacifiCorp would maintain an area of cleared brush around the equipment, minimizing the potential for fire. As a result, operation of the Alternative would have a less than significant impact to risk of loss, injury or death involving wildland fires.

## Hydrology and Water Quality

Would Project Alternative 1:

### a) Violate any water quality standards or waste discharge requirements?

**Less than Significant Impact.** Project construction has the potential for temporary and minor increases in sedimentation. Soils along the Alternative have a slight to moderate potential for rill and sheet erosion, and therefore temporary sedimentation could occur from stormwater runoff at the substation site, staging area, pole locations, pull and tension sites, access roads, and other disturbed sites as a result of construction. Excavation for pole holes in wetland with standing water or adjacent to wetland areas may result in a discharge of sediment to surface waters. In addition to sediment, water pollutants, such as petroleum-based fuels and hydraulic fluids, may be generated by inadvertent releases from construction vehicles and equipment. Such pollutants may become mingled with stormwater and discharged into surface water or groundwaters, resulting in water quality degradation.

The new Lassen Substation could potentially experience equipment failure that results in release of fluids, such as coolant oil, into the substation. As required by USEPA regulations, the Alternative would prepare an SPCC Plan and incorporate it into the substation design to prevent discharge of oils from leaving the substation, or entering surface waters, wetlands, or groundwater.

The Alternative would develop and implement a SWPPP prior to commencement of ground-disturbing activities. As required by the SWRCB, the SWPPP would outline measures to minimize or prevent erosion, sedimentation, or the release of pollutants into stormwater during construction of the Alternative. The Alternative would implement the recommended BMPs as outlined in the SWPPP, and potential impacts to water quality would be less than significant.

### b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

**Less than Significant Impact.** Removal of the existing substation and construction of the new Lassen Substation at Alternative Site 1 would not involve the removal or the addition of groundwater from the Project area. Construction and operation of the Lassen Substation would

not introduce a substantial increase of impermeable surfaces, and removal of Mt. Shasta Substation would not include addition of impermeable surfaces. Construction of Lassen Substation and access road improvement or construction would consist primarily of a substrate of dirt or gravel.

Groundwater may be encountered during construction, as indicated by geologic borings. Dewatering operations would be implemented as described in the SWPPP, and groundwater would not be discharged to Waters of the U.S. but would be contained within the work area, as feasible, using standard stormwater BMPs (*e.g.*, straw wattles) and allowed to percolate back to the ground.

Project operation would not involve the use of groundwater; therefore, there would be no impacts to groundwater supplies and recharge. Overall, Project-related impacts to groundwater recharge and aquifer volume would be less than significant.

**c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?**

**Less than Significant Impact.** Alteration to existing drainage patterns on the Alternative site would occur as part of construction. Stormwater drainage inside the substation would be designed to minimize erosion and increase sediment control, and minimize potential erosion or sedimentation impacts to adjacent wetlands. During pole replacement and upgrade of the transmission line, some areas may require blading to allow for safe access of construction vehicles and equipment. Work areas, including areas requiring blading or clearing, would be clearly marked. Construction vehicles and equipment would be prohibited from disturbing slopes and drainages outside of the marked area.

When construction is completed, temporarily disturbed areas would be restored to pre-Project conditions and revegetated to minimize erosion and sedimentation. No substantial erosion or siltation as a result of drainage alteration would be expected on- or off-site, and therefore impacts resulting from erosion and siltation on- or off-site would be less than significant.

**d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?**

**Less than Significant Impact.** Substantial alteration of streams or rivers or a substantial increase of surface runoff would not occur during construction or operation of construction on Alternative Site 1. Access roads would avoid crossing streams and drainages, if feasible. If such crossings could not be avoided, temporary crossings would be installed to minimize impacts. When construction is complete, all temporary crossings would be removed, and disturbed areas would be restored to pre-Project conditions.

Vegetation removal and soil disturbance would occur during clearing and filling of Alternative Site 1, the staging area, access roads, and ROW, resulting in the potential for increased stormwater runoff that could lead to flooding. However, implementation of BMPs as described in the SWPPP would minimize the potential for surface runoff and reduce the potential for on- or off-site flooding to a less than significant level.

Alternative Site 1 is not located near a dam or levee and would not involve the construction or modification to a dam or levee that could cause flooding on- or off-site. The nearest dam is Box

Canyon Dam, approximately 1.8 miles south of the Project. Box Canyon Dam is located on the eastern side of Lake Siskiyou, and empties to the east into the Sacramento River. The Alternative is not situated as to potentially cause dam failure; therefore, the Alternative would not expose people or structures to a significant risk of loss, injury or death involving flooding.

**e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

**Less than Significant Impact.** Construction and operation of the Project at Alternative Site 1 would result in a minor, temporary increase of surface runoff as a result of ground clearance for construction; however, the access road and the Alternative site would be located mostly in open space and in a rural residential area that does not have stormwater drainage systems. Stormwater runoff from the Alternative site would drain south into an existing vegetated ditch on the east side of Old Stage Road, and runoff from work areas around pole structures would be contained to the fields in which they are located. Implementation of basic construction BMPs as outlined in the SWPPP would minimize potential impacts associated with stormwater drainage capacity to a less than significant level.

**f) Otherwise substantially degrade water quality?**

**Less than Significant Impact.** The Alternative would not introduce any pollutants that would substantially degrade water quality (*e.g.*, biostimulatory substances, toxins, or chemical constituents), nor would the Alternative cause an increase in factors such as temperature, pH, or salinity that would degrade water quality. The potential for substantially degrading water quality as a result of Project construction at the Alternative site, including removal of the existing Mt. Shasta Substation, would be minimized with the implementation of BMPs associated with the SWPPP, and impacts would be less than significant.

Water quality, including groundwater, could be degraded by accidental spills from oil-filled electrical equipment (*i.e.*, circuit breakers, transformers, regulators, and capacitors) and storage facilities at the proposed Lassen Substation. As part of the Alternative design, the SPCC plan would include engineered and operational methods for preventing, containing, and controlling potential releases and provisions for a quick and safe cleanup. The proposed substation would also be gated with chain link fencing to prevent access to equipment by unauthorized persons. With implementation of the SPCC plan for operation of the proposed substation, there would be no impact to water quality from oil-related spills.

Overall, potential impacts to water quality resulting from construction and operation of the Alternative would be less than significant.

**g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?**

**No Impact.** The Alternative does not involve construction of houses, and Alternative Site 1 is not located within a 100-year floodplain. The Alternative would therefore not place or move housing within a 100-year floodplain, and no impact would occur.

**h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?**

**No Impact.** As stated above, no components of the Alternative are located within a 100-year floodplain; therefore, no impacts resulting from impeding or redirecting flood flows would occur.

**i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?**

**Less than Significant Impact.** Alternative Site 1 is not located within a 100-year floodplain, nor is it located near any water bodies that would pose a significant risk of flooding, including flooding as the result of a dam or levee failure. The nearest water bodies are Big Springs Creek and Cold Creek, located approximately 0.75 mile north and 0.25 mile east of the Alternative site, respectively. Big Springs Creek has its source from a spring located in Mt. Shasta City Park, 1.6 miles north of the Alternative site. Big Springs Creek flows south into the Mt. Shasta Fish Hatchery, and is the sole source of water for hatchery operations. Water leaving the hatchery becomes Cold Creek, located approximately 0.5 mile northwest of the Alternative, and flows south into Lake Siskiyou. The nearest dam to the Alternative site is Box Canyon Dam, approximately 1.8 miles south (downstream). Box Canyon Dam is located on the eastern side of Lake Siskiyou, and empties to the east into the Sacramento River.

Big Springs Creek does not have an associated 100-year floodplain. Cold Creek does not have an associated 100-year floodplain designated until it reaches the Lake Siskiyou outlet, approximately one mile south of the Alternative. Box Canyon Dam is nearly two miles to the south of the Alternative and, in the event of catastrophic failure, would release water from Lake Siskiyou southeast into the Sacramento River, away from the Project area. There are no levees within the Project area. Potential for the Alternative to pose significant risk of loss, injury, or death resulting from flooding is less than significant.

**j) Expose people to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow?**

**Less than Significant Impact.** Alternative Site 1 is not located near a large body of water, and thus would not cause inundation by seiche or tsunami; therefore, the Alternative would not result in impacts due to inundation by seiche or tsunami. While the Project area may be subject to mudflow hazards resulting from seismic activity or landslide, the Alternative is unlikely to induce a mudflow event at a level to cause destruction or inundation of buildings or structures. The potential impact resulting from mudflow is less than significant.

### **Land Use and Planning**

Would Project Alternative 1:

**a) Physically divide an established community?**

**No Impact.** Construction and operation of the Project at Alternative Site 1 would not physically divide an existing community. The site is located at the edge of the City of Mt. Shasta, and the pole replacement segment (1.5 miles) would cross generally undeveloped open space. The pole replacement segment would be within existing PacifiCorp ROW. The Alternative would be located in a rural area not within the center of city or town. Thus, it would not physically divide an established community, and there would be no impact.

**b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?**

**No Impact.** Although the Alternative would be exempt from local land use and zoning regulations and permitting, GO- No. 131-D, Section III.C requires “the utility to communicate with, and obtain the input of, local authorities regarding land-use matters and obtain any nondiscretionary local permits.” The land use consistency analysis with these plans and policies is provided for informational purposes.

In accordance with Siskiyou County Code, Section 10-6.4803(a), subject to obtaining a use permit, public utility uses are permitted in a R-R District. A review of the Siskiyou County General Plan identifies the Alternative site to be located within a Wildlife Hazard Area, Woodland Productivity Area, Erosion Hazard Area, Prime Agricultural Soils Area, and Water Quality Area. Use Permit approval would ensure that the Alternative site is consistent with the Siskiyou County Zoning Ordinance.

Zoning districts within Siskiyou County and the City of Mt. Shasta do not specifically address transmission lines. The transmission line upgrade will not require a use permit or a conditional use permit (personal communication with Rowland Hickel, Siskiyou County Planner, and Keith McKinley, City of Mt. Shasta Planner, October 17, 2011).

Construction or operation of the Project at the Alternative site would not conflict with any applicable land use plan, policy, or regulation, and no impact would occur.

**c) Conflict with any applicable habitat conservation plan or natural community conservation plan?**

**No Impact.** Siskiyou County has not adopted a Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan for the Project area or its vicinity. The Alternative would not conflict with any habitat conservation plan. No impacts are anticipated.

## **Mineral Resources**

Would Project Alternative 1:

**a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?**

**No Impact.** There is one known mineral resource in the Project area. As stated previously, a sand and gravel surface mine is located approximately 2.5 miles northwest of Alternative Site 1, along I-5 (CGS 2010). In general, soils in the Project area have been rated fair sources for sand, and poor sources for gravel (Newlun 1983).

There are no designated Mineral Resource Zones and no known mineral resources within the Alternative site or within the existing ROW; therefore, no impacts would occur.

**b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

**No Impact.** Neither the Siskiyou County General Plan nor the City of Mt. Shasta General plan designate mineral resource recovery sites on the Alternative site or within the existing ROW; therefore, no impacts would occur and no mitigation would be required.

## Noise

Would Project Alternative 1:

- a) **Cause exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?**

**Less than Significant Impact.** Temporary demolition- and construction-related noise would occur within rural agricultural and residential areas, but would be within acceptable levels of plans and ordinances. This noise would include demolition of the existing substation facility, site clearing, earth moving, construction of the new substation and transmission line poles, clipping in the conducting wires, and restoration of the ROW. No construction activities would occur in proximity to existing residential uses except between the hours of 7 a.m. and 7 p.m., Monday through Friday, or 8 a.m. to 5 p.m. on Saturdays.

During the Project's operational lifetime, noise generated by the new transformer would be comparable to noise generated by the transformer at the existing Mt. Shasta Substation. Based on the specifications of the proposed transformer (115x 69-12.5kV, 15/20/25 MVA), it would generate an approximate noise level of 53 dBA at 50 feet and 33 dBA at 500 feet. Thus, transformer noise at the closest residences (350 feet and 360 feet from Alternative Site 1) would not exceed the County's specified maximum noise exposure levels due to stationary sources.

When compared to the existing 69 kV transmission line, the proposed transmission line would produce a negligible increase in noise level increase. Thus, operation of the Project's transmission line would not result in the generation of noise levels above 60 dBA, which is the Siskiyou County noise standard for the area. Therefore, potential impacts from the operation of the transmission line would be less than significant.

- b) **Cause exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?**

**Less than Significant Impact.** Demolition of the existing Mt. Shasta Substation or construction of the Lassen Substation and associated transmission line (tamping of ground surfaces, drilling, and the passing of heavy trucks on uneven surfaces) may produce minor groundborne vibration in the immediate vicinity of the construction activity. Impacts from construction-related groundborne vibration, should they occur, would be intermittent and confined to the immediate area surrounding the activity.

Operation of the Alternative would consist of routine maintenance activities and emergency repairs. These activities would be unlikely to produce groundborne vibration. Operation of transformers at the Lassen Substation could produce groundborne vibration; however, groundborne vibrations would be perceptible only in the immediate vicinity of the transformer pad, if at all. Impacts would be less than significant.

- c) **Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less Than Significant Impact.** The permanent noise sources that would occur with the Alternative are limited to the transmission line segment (conductors and insulators) and transformer operation at the proposed Lassen Substation. Audible noise and radio noise levels for the Project are described in Section 4.12.2, and would apply to construction of the Alternative as well as to the proposed Project.

Construction of the Project's transmission line would not result in the generation of noise levels above 60 dBA, which is the Siskiyou County noise standard for the area. Therefore, potential impacts from the operation of the transmission line would be less than significant. Radio Interference levels from the Lassen Substation transmission line would be less than 20 dB $\mu$ V/m under fair weather conditions, and would be a less than significant impact. During operation of the Alternative, transformers and reactors within the substation would be the most likely to produce audible noise, usually in the form of a low-frequency humming sound. The low humming noise generated from the operation of substation equipment at the Alternative site would be mostly contained on-site and would not result in a permanent increase in ambient noise levels in the vicinity. Residences neighboring the Alternative site are already exposed to facility noise associated with the operation of the existing Mt. Shasta Substation. Thus, the operation of a new substation at this location would not result in any appreciable increase to the existing average ambient noise levels.

As a result, construction of the Project on Alternative Site 1 would not cause a substantial permanent increase in ambient noise levels in the vicinity of the Alternative above levels existing without the Project. Impacts would be less than significant.

**d) Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?**

**Less Than Significant Impact.** Project construction noise would be generated by on- and off-site sources. On-site construction noise would result from the operation of heavy-duty construction equipment such as bulldozers, backhoes, and cranes. Off-site noise would be produced by trucks transporting construction materials and workers to and from the staging areas, transmission line ROW, and substation site. Anticipated noise levels from individual pieces of construction equipment would typically range from 70 dBA to 100 dBA at a distance of approximately 50 feet, as indicated in Table 4.12-4. The use of heavy equipment during construction would generate intermittent noise in excess of 65 dBA. This noise would be audible to residences located within 50 feet of the Alternative. However, these noise levels would be short-term in duration and would occur during daytime hours only. When compared to existing noise sources within the Project vicinity (e.g., vehicles on adjacent roads and I-5, farming equipment), these intermittent noises would not represent a significant change or impact from the existing noises within the area.

Demolition of the existing Mt. Shasta Substation and construction of the new Lassen Substation and transmission line would include the temporary and intermittent use of trucks bringing construction materials and personnel to and from the proposed substation site, staging areas, and transmission line ROW. The site and transmission line construction activities would take place in rural agricultural areas, although some activities would be in or adjacent to rural residential areas. Construction occurring in proximity to residential areas would occur between 8:00 a.m. and 7:00 p.m.

While impacts associated with demolition and construction activities will be less than significant, PacifiCorp would employ the noise-reducing practices described in Section 4.12.3 in an effort to further reduce noise produced by these activities.

Operation of the Alternative would consist of routine, short-term inspection and maintenance of the facilities. Although the Lassen Substation would be unmanned and remotely monitored, routine maintenance activities would occur at least one time per month and would consist of testing, monitoring, and repairing equipment. Maintenance of the transmission line would occur on an as-needed basis, and activities would include repairing conductors, replacing insulators, replacing poles, and access road maintenance. Because operations would involve limited amounts

of activities, the Alternative would not contribute to a temporary increase in ambient noise in the area. Impacts would be less than significant.

- e) **For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?**

**No Impact.** The nearest public use airport is the Dunsmuir Municipal-Mott Airport, which is located approximately four miles southwest of Alternative Site 1. No noise impacts associated with the airport operations are anticipated to affect people working within the Project area. No impacts are anticipated.

- f) **For a Project within the vicinity of a private airstrip, would the Project expose people residing or working in the Project area to excessive noise levels?**

**No Impact.** There are no private airstrips located within the vicinity of Alternative Site 1. Therefore, the Alternative would not expose people working in the Project area during construction, operation, or decommissioning to excessive noise levels attributable to an airport or private airstrip. There would be no impact.

### **Population and Housing**

Would Project Alternative 1:

- a) **Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**Less than Significant Impact.** The increased demand for workers for construction of the Alternative would be temporary, and therefore would not induce substantial population growth in the area. The Alternative may require temporary accommodations for construction workers during construction. However, this need is anticipated to be met by hotels and motels in the vicinity of the Alternative, as there are a number of hotels and motels available primarily in the cities of Mt. Shasta and Weed. Therefore, no new housing would need to be built for temporary construction workers. No new access roads would be constructed in order to accommodate construction and maintenance activities.

The Alternative would not include any new homes, so there would be no direct impact on population growth in the area. The proposed substation would be unattended and remotely operated, requiring only occasional visits for routine maintenance and emergency repair. The frequency of inspection and maintenance activities would depend upon weather effects and any unique problems that may arise due to such variables as substantial storm damage or vandalism.

The Project is required to ensure the availability of safe and reliable electric service to meet customer electrical demand in the Electrical Needs Area. Existing facilities would not meet forecasted, long-term electrical demand within the Electrical Needs Area. The Alternative would not induce growth or create new opportunities for local industry or commerce or impact population growth in the area beyond what is already planned by Siskiyou County and the City of Mt. Shasta. but instead is designed to respond to existing growth and demand trends.

Potential impacts related to population growth (directly or indirectly) in the area during construction would be less than significant.

**b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?**

**No Impact.** The Lassen Substation would be rebuilt on the site of the existing Mt. Shasta substation. Construction of the Lassen Substation would not result in the displacement of a substantial number of people, as no residences would be displaced.

**c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?**

**No Impact.** The Alternative would be constructed in a rural and sparsely populated area on land or easements that PacifiCorp currently owns or would obtain for this purpose. Construction of the Alternative would not displace residences or people, and construction of replacement housing would not be required. Operation and maintenance of the new Lassen Substation would be conducted within the substation's permanent footprint. No impact would occur.

### **Public Services**

Would Project Alternative 1:

**a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or with the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection, police protection, schools, parks, or other public facilities?**

**Less than Significant Impact.** Short-term construction activities would not require the expansion of fire protection services in the City of Mt. Shasta or in unincorporated Siskiyou County. Alternative Site 1 is classified as a very high fire hazard area (Cal Fire 2007). Fire protection to the Project area would be provided by the Mt. Shasta Fire Protection District, as well as the Mt. Shasta Fire Department. Proper fire-safety protocols and standards would be followed during construction of the substation, and it is not expected that the Alternative would require an increase in fire suppression activities by either of these units. In addition, PacifiCorp would clear vegetation from the work areas prior to staging construction equipment, minimizing the probability of a fire. Construction activities would be performed by either PacifiCorp construction crews or by local contractors managed by PacifiCorp construction management personnel. The number of construction workers expected to work in the area is not expected to substantially increase the demand for fire protection services, nor would it alter emergency service response times or service ratios in the area. Due to the temporary nature of the construction period (approximately six to 12 months), construction work is not anticipated to result in the need for new or physically altered fire protection emergency services.

Construction of the Alternative is unlikely to require the use of local law enforcement agencies. If necessary, PacifiCorp would hire a local security company to provide 24-hour attendance at the material staging yards during construction, thereby minimizing the involvement of local law enforcement. Once the proposed substation site is graded, a temporary chain link fence would be installed around the substation perimeter for added security. Temporary construction trailers for supervisory and clerical personnel would also be situated at the proposed substation site. Therefore, construction work is not anticipated to result in the need for new or physically altered police protection or emergency services.

The Alternative would not result in an increase in residential population that would affect the demand for schools. Construction would be temporary and performed by either PacifiCorp construction crews based out of one of the PacifiCorp local facilities or local contractors managed by PacifiCorp construction management personnel who would not be expected to bring a substantial number of spouses and/or any school-age children to the area. Therefore, the Alternative is not expected to significantly impact school enrollment or the performance objectives of any local public schools.

Operation of the Alternative would consist of routine inspection and maintenance of facilities. These activities are unlikely to require the use of public services.

The Alternative would be unattended, and electrical equipment within the proposed substation would be remotely monitored and controlled by an automated system. PacifiCorp personnel would visit for electrical switching, resulting in only occasional visits for routine maintenance purposes. Routine maintenance would include equipment testing, monitoring, and repair. Therefore, operation of the Alternative would not significantly affect police and fire protection response times or create higher demand for these public services.

There would be a less than significant impact on government facilities, such as fire protection, police protection, schools, libraries, hospitals, or other public facilities.

## Recreation

Would Project Alternative 1:

**a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

**No Impact.** Construction and operation of the Alternative would not cause population growth that would result in increased use of recreational facilities. The proposed substation would be unattended and automated, requiring only occasional visits for routine maintenance and emergency repair. Recreational uses in the Project vicinity include passive activities such as bicycling, walking, and jogging. Traffic during Alternative construction near these areas could briefly disrupt recreational activities, but long-term operation of the Alternative would not interfere with recreational activities. Thus, the Alternative does not involve any direct or indirect actions that would create an increased demand for recreational services.

**b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?**

**No Impact.** Construction and operation of the Alternative would not include recreational facilities or require the construction or expansion of recreational facilities, as it would not induce population growth. As a result, there would be no impact to the environment from new or expanded recreational facilities.

Recreational uses in the Project vicinity include passive activities such as bicycling, walking, and jogging. Traffic during Alternative construction near these areas could briefly disrupt recreational activities, but long-term operation of the Alternative would not interfere with recreational activities. Thus, the Alternative does not involve any direct or indirect actions that would create an increased demand for recreational services. No mitigation measures are required.

## Transportation and Traffic

Would Project Alternative 1:

- a) **Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?**

**Less than Significant Impact.** Traffic would be generated during construction as a result of required deliveries of materials and equipment to Alternative Site 1, staging areas, and pole sites. Construction would be performed by either PacifiCorp construction crews or its contractors. PacifiCorp anticipates a total of approximately 14 commuting construction personnel working on a given day. These personnel would travel to and from the various construction sites each day.

Construction-generated traffic would be temporary (i.e., approximately 26 to 31 months for the entire Project) and, therefore, would not result in long-term degradation in performance of any of the roadways in the vicinity of the Project components. In addition, not all construction-related trips would be assigned to the same construction location (e.g., crews would be assigned to different sections of the transmission lines); these Project-generated trips would be dispersed throughout the study area and would occur at varying times throughout the workday. Therefore, the Alternative would not result in substantial traffic congestion and would not add a substantial number of trips to the roadways in the vicinity of the Project components.

The proposed substation would be unattended and remotely operated. The frequency of inspection and maintenance activities would depend upon weather effects and any unique problems that may arise due to such variables as substantial storm damage or vandalism. Vegetation management in the transmission line ROW may include the control of noxious weeds and the periodic trimming of shrubs or trees to reduce fire fuel. These operations would not result in a substantial increase in traffic in relation to existing traffic load and capacity of the street system.

Construction and operation of the Alternative would not result in a substantial increase in traffic in relation to existing traffic load and capacity of the street system. Additionally, it would not affect pedestrian or bicycle paths or mass transit. As a result, impacts related to increased traffic during construction and operation would be less than significant.

- b) **Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?**

**Less than Significant Impact.** See discussion above under a) above. Impacts are anticipated to be less than significant.

- c) **Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?**

**No Impact.** The Alternative does not involve the use of air traffic, and so would have no impact relating to an increase in air traffic levels. It is not anticipated that construction and operation of the Alternative would involve the use of helicopters. Similarly, the Alternative would not cause a change in air traffic patterns related to the Dunsmuir Municipal-Mott Airport, which is four miles

southeast of Alternative Site 1. Approximately 10 to 15 new poles will replace deteriorated poles within the existing transmission line corridor. The new poles are expected to be similar in height to the existing poles and the poles that will be replaced. There would be no impact to air traffic patterns from construction and operation of the Alternative.

**d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**No Impact.** The Alternative would not alter the configuration (alignment) of area roadways, introduce curves, or add intersections or other design features that could increase hazards due to design features. The Alternative would not create an incompatible use with transportation or traffic. The width of the proposed substation site access driveway off of South Old Stage Road will be designed and improved to accommodate large truck movements, deliveries, and construction equipment used for construction of the proposed substation. No impacts would occur.

**e) Result in inadequate emergency access?**

**Less than Significant Impact.** Construction and demolition activities associated with the Alternative may require alterations to local roadways. As such, if any work requires modifications or activities within the local road ROWs, PacifiCorp would obtain appropriate local permits. This process would involve the preparation of appropriate management plans and provisions to ensure adequate compliance with local ordinances. Also, if any work were to potentially limit access, permits would be obtained and plans would be implemented to ensure safety and avoid the closure of any emergency access route. Therefore, construction of the Alternative would not result in inadequate emergency access to the area affected by the Alternative.

Operation of the Alternative would not result in a substantial increase in traffic in relation to existing traffic load and capacity of the street system. Therefore, operation of the Alternative would not result in inadequate emergency access to the area affected by the Alternative. As a result, impacts to emergency access from construction and operation of the Alternative would be less than significant.

**f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?**

**No Impact.** Siskiyou County has not adopted any policies, plans, or programs supporting alternative transportation. The Mt. Shasta Bicycle, Pedestrian, and Trails Master Plan does not apply to the portion of the Alternative that would be within the City of Mt. Shasta. Therefore, the Alternative would not conflict with any adopted policies, plans, or programs, nor would the Alternative decrease the performance or safety of such facilities. No impact would occur.

## **Utilities and Service Systems**

Would Project Alternative 1:

**a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?**

**No Impact.** During construction, portable toilets would be provided for use by construction personnel at the substation site and would be maintained by an outside service company for the

construction period. Therefore, wastewater would not be discharged during construction of the Alternative.

During operation of the Alternative, a portable chemical unit (portable restroom, not connected to local sewer and wastewater treatment system) would be placed within the substation perimeter wall for use by PacifiCorp personnel and maintenance contractors and would be regularly maintained. The proposed substation would be unattended and remotely operated; therefore, wastewater discharge would be minimal.

**b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**No Impact.** During construction, the use of water for dust suppression would be minimal and short-term, and would not be in volumes or flow rates that would affect water treatment plant capacities. Landscaping and irrigation would be established around the full perimeter of the substation after the perimeter wall is constructed and water service is established. PacifiCorp would consult with the local jurisdiction to develop an appropriate landscaping plan. The use of water for landscape irrigation during operation would be minimal; therefore, irrigation water use would not be in volumes that would affect water treatment plant capacities. Therefore, construction and operation of the Alternative would not require the expansion of water facilities serving the area, and thus no impact would occur.

**c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?**

**No Impact.** The grading plan for Alternative Site 1 and the SWPPP would be designed to control the discharge of stormwater runoff from the site, which currently flows into existing drainage. Site design BMPs would be installed within the enclosed substation to reduce and control post-development runoff rates, and source control BMPs would be incorporated into the site plans to reduce the potential for stormwater runoff.

The proposed substation would also be surfaced with gravel as a source control BMP, which would reduce stormwater runoff. The remaining portion of the site would maintain its existing drainage pattern. Therefore, construction and operation of the Alternative would not require the construction of new stormwater drainage facilities or the expansion of existing facilities.

Construction of the substation would not add any new, significant aboveground structures. Therefore, their construction and operation would not alter existing drainage patterns or stormwater runoff. As a result, construction and operation of the Alternative would not require construction of new stormwater drainage facilities or expansion of existing facilities in the area. No impact would occur.

**d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?**

**Less than Significant Impact.** The use of water for dust suppression, clean up, drinking and hand washing during construction of the Alternative would be minimal, most likely brought to the construction sites by water trucks, and would not be in volumes that would affect water supplies. Restroom facilities for the Alternative would be portable and would not require a connection to the local water supply system.

The use of water for landscape irrigation during operation would be minimal; therefore, irrigation water use would not be in volumes that would affect water supplies. It is anticipated that restroom facilities for the Alternative, during both construction and operation, would be portable and would not require connection to the local water supply system. Personnel would be on site occasionally for routine maintenance and emergency repair purposes during operation of the Alternative; therefore, water use for a restroom would be minimal. Construction and operation of the Alternative would have a less than significant impact to the water supply in the area.

- e) **Result in the determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?**

**No Impact.** Construction and operation of the Alternative would not discharge large volumes of wastewater to a wastewater treatment facility that would exceed its capacity. As described previously, a portable chemical unit would be placed within the substation perimeter wall for use during construction of the Alternative, and maintained by an outside service company. Therefore, wastewater would not be discharged during construction of the proposed substation site. Similarly, wastewater would not be discharged to the sewer system during construction.

During Alternative operation, a portable chemical unit (portable restroom, not connected to local sewer and wastewater treatment system) would be placed within the proposed Substation perimeter wall for use by PacifiCorp personnel and maintenance contractors. Since it would not be connected to the local sewer and wastewater treatment system, wastewater would not be discharged. Therefore, construction and operation of the Alternative would have no impact to wastewater treatment providers in the area.

- f) **Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs?**

**Less than Significant Impact.** Construction of the Alternative would result in the generation of various waste materials, many of which can likely be recycled and salvaged. Waste items and materials would be collected by construction crews and separated into roll-off boxes at the materials staging areas. All waste materials that are not recyclable would be categorized by PacifiCorp in order to ensure appropriate final disposal. Non-hazardous waste would be transported to local waste management facilities, and, if any hazardous waste is identified for disposal (e.g., potentially the removed wood poles), it would be disposed of in a Class I hazardous waste landfill or in the lined portion of an RWQCB-certified municipal landfill, as appropriate. Hazardous liquid materials, such as mineral oil, would be subject to the developed SPCC, which incorporates features such as trenches or berms to contain spills, should they occur. Soil excavated for the Alternative would either be used as fill or disposed of off-site at an appropriately licensed facility.

Although there would be waste generated from construction activities that would be sent to landfills in the area, the amount is not anticipated to be large enough to affect the permitted capacity of a landfill. The Alternative would be served by a landfill with sufficient capacity to accommodate the Project's solid waste disposal needs. Currently, the Yreka solid waste landfill, which is the landfill closest to Alternative Site 1, possesses over 66 percent of available remaining capacity.

Operation of Alternative Project would consist of routine maintenance and emergency repair of the facilities, and these activities would not generate waste in an amount that would affect the permitted capacity of landfills in the area. The Alternative would be served by a landfill with

sufficient capacity to accommodate the Project's solid waste disposal needs, as discussed above. Therefore, construction- and operation-related to landfill capacity would be less than significant.

**g) Comply with federal, state, and local statutes and regulations related to solid waste?**

**No Impact.** Construction of the Alternative would comply with federal, State, and local statutes and regulations related to solid waste. The Alternative includes the removal and disposal of treated wood poles, and these wood poles would be disposed of in a Class I hazardous waste landfill, or in the lined portion of an RWQCB-certified municipal landfill.

Operation of the Alternative would consist of routine maintenance and emergency repair. These activities are not expected to generate solid waste subject to federal, State, or local statutes or regulations related to solid waste. As a result, no impact to federal, State, and local statutes and regulations related to solid waste would occur.

**Relationship to Proposed Project Objectives**

Alternative Site 1 would generally meet the objectives of the proposed Project; however, construction of Alternative Site 1 would result in potentially significant impacts to wetlands. Approximately one acre of wetlands immediately adjacent to the existing Mt. Shasta Substation would be filled to accommodate expansion of the substation. Moreover, these wetlands form a portion of the Merrill-Morgan Wetland Mitigation Site. Implementation of mitigation measures would not reduce the area required to expand the substation, and impacts to these wetlands would be significant.

The one-acre site located to the southeast of the Mt. Shasta Substation is unused, inactive pasture land vegetated with non-native grasses. Expansion in this area is infeasible due to the dimension of the parcel which prevents the construction of the new, larger substation.

**No Project Alternative**

Section 15126.6(e) of the CEQA Guidelines requires the analysis of a "No Project" Alternative. The purpose of describing and analyzing a No Project Alternative is to allow decision-makers to consider the impacts of not approving the proposed Project. Analysis of the No Project Alternative includes consideration of the existing condition of the environment in the proposed Project area along with what would be reasonably expected to occur in the foreseeable future if the proposed Project were not approved.

Under the No Project Alternative, there would be no construction of a new 115 kV substation, a new 200-foot transmission line, or a new 300-foot underground transmission line, or upgrade of 36 poles. Under the No Project Alternative, the proposed Project would not be implemented and the existing conditions in the Project area would not be changed. The No Project Alternative may result in a reduction of environmental impacts in the short-term, but this Alternative would not meet any of the objectives of the proposed Project. PacifiCorp's electrical system in the Mt. Shasta area would continue under its deficient condition, resulting in increased potential for system unreliability. Therefore, the No Project Alternative would not adequately meet the objectives of the proposed Project as described in Section 2, and is determined to be infeasible.

## ***Impact Analysis***

### **Aesthetics**

Under this alternative, the proposed Project would not be constructed, and there would be no impacts to aesthetics. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

### **Agriculture and Forestry Resources**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp, and no Farmland would be impacted. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. If a new project required PacifiCorp to acquire new ROW, there would be a potential that the Project could result in impacts to designated Farmland. Furthermore, acquisition of new ROW would have the potential to result in construction and operational impacts if new ROW would be located in areas zoned for agricultural uses or if the ROW included properties under an existing Williamson Act contract. Also, if a new project required PacifiCorp to acquire new ROW in areas currently used as Farmland, there would be a potential that the project could result in the conversion of Farmland to non-agricultural use.

### **Air Quality and Greenhouse Gas Emissions**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

### **Biological Resources**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

### **Cultural Resources**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

### **Geology and Soils**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the

proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

### **Hazards and Hazardous Materials**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

If the Lassen Substation or a similar project were not constructed, different impacts related to hazards and hazardous materials may result in the proposed Project area from the construction and operation of other types of development, such as industrial or commercial projects.

### **Hydrology and Water Quality**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

### **Land Use and Planning**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

### **Mineral Resources**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. The area where the proposed Project would have been constructed would be available for mineral exploration, provided that such activity is permissible within the development policies and zoning of the local jurisdictions.

However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

### **Noise**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

## **Population and Housing**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

## **Public Services and Utilities**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. If the Lassen Substation or a similar project were not constructed, disruptions in reliable electrical service could result in indirect impacts to public services and utilities. For example, traffic signals that depend on power to regulate the flow of traffic would be rendered inoperable during an electricity outage, and subsequent traffic could delay the response time of emergency response providers. Depending on the frequency, duration, and extent of these service interruptions, impacts associated with the No Project Alternative could be significant and cumulatively considerable. Other public services that could be impacted by disruptions to electrical service include hospitals, schools and universities, government services (courts, jails, etc.), and all types of businesses that serve the public.

However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

## **Recreation**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. Any project that would satisfy the objectives of the proposed Project would likely not result in impacts related to increased use of existing parks or recreational facilities.

However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

## **Transportation and Traffic**

Under the No Project Alternative, none of the facilities or infrastructure upgrades associated with the proposed Project evaluated in this PEA would be constructed by PacifiCorp. However, PacifiCorp would likely be required to design a new substation project in order to satisfy the objectives of the proposed Project. Potential impacts from the construction, operation, and maintenance of such a project would likely be similar in significance level to the proposed Project.

## **Relationship to Proposed Project Objectives**

With the No Project Alternative, there would be no construction of a new or expanded substation. The Mt. Shasta Substation would continue to deteriorate from wood rot and bird damage; the transmission capacity of the Mt. Shasta Substation would not be increased, and reliability of the electric service to area customers would be at risk. The Mt. Shasta Substation would be unable to meet projected short-term summer peak loads, and would not meet future transmission conversion needs of the Mt. Shasta area.

### 6.3 Growth-Inducing Impacts

CEQA requires discussion of the ways in which a proposed Project could directly or indirectly foster economic development or population growth, and how that growth could, in turn, affect the surrounding environment. Growth can be induced in a number of ways, including the elimination of obstacles to growth, or through the stimulation of economic activity within the region. Under CEQA, induced growth is not considered necessarily detrimental or beneficial. Induced growth is considered a significant impact only if it directly or indirectly affects the ability of agencies to provide needed public services, if the expected growth inducement directly conflicts with adopted policies limiting growth, or if it can be demonstrated that the potential growth, in some other way, could significantly affect the environment.

As explained in Section 2.0, Project Description, of this PEA, the Project is necessary to improve reliability by increasing transmission capacity in the Mt. Shasta area in order to continue safe and reliable electric service to customers in the area. By increasing transmission capacity in the area, additional economic or population growth can be accommodated. However, the Project will not induce growth in the area. Growth is carefully planned and regulated by the county general plan, which contains policies to protect various land uses and to plan urban development.

The existing Mt. Shasta Substation reached 103 percent of its transformer guideline rating in the winter of 2009, and the summer load is projected to reach the transformer rating by 2015, increasing the potential for system instability and outage. The existing substation is a severely deteriorated wood structure; rot and damage caused by birds have brought the structure to the end of its useful life. Due to surrounding physical and land use constraints, there is insufficient space to allow for the rebuild of the existing substation at its current location. Accordingly, PacifiCorp has chosen a site located at 504 Old Stage Road, northeast of the current substation site, as the preferred site for the proposed substation.

Without this Project, and with continued load growth in the area, approximately 4,156 customers would be at risk of an extended outage during an equipment failure caused by overload.

PacifiCorp upgrades electrical facilities incrementally based on growth planned by local government agencies. These growth projections reflect economic and urban development that is planned and approved by city and county governments, which have authority over land uses. Local planning policies and zoning regulations have the biggest influence in controlling the pace and ultimate amount of growth in this area.

### 6.4 Suggested Applicant Proposed Measures to Address GHG Emissions

As described in Section 4.4.5, while none of the impacts were identified as significant, the following air emission control measures are proposed to reduce air emissions to the extent feasible:

**Air Emission Control Measure 1:** Particulate matter emissions shall be controlled by implementing standard construction dust control measures including, but not limited to, the following:

- Minimize soil disturbance.
- Regularly water disturbed areas, including on-site vehicle/equipment travel routes and soil stockpiles. Watering should be sufficient to prevent airborne dust from leaving the site.
- Curtail earth-moving activities on windy days.
- Ensure that the engines of all construction equipment are properly tuned.

- Limit the maximum speed to 15 miles per hour on unpaved surfaces.
- Replant vegetation in disturbed areas as quickly as possible.
- Implement other effective particulate matter control measures, as needed.

**Air Emission Control Measure 2:** Greenhouse gas emissions generated during Project construction shall be minimized by implementing the following measures:

- Use ARB-certified construction equipment, where available.
- Use alternative fuel types for construction equipment where feasible.
- Use local building materials.
- Limit construction vehicle idling time.

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## **APPENDIX A    VISUAL SIMULATIONS**

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## **APPENDIX B    BIOLOGICAL RESOURCES TECHNICAL REPORT**

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## **APPENDIX D    JURISDICTIONAL DELINEATION REPORT**

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# **APPENDIX E      PRELIMINARY GEOTECHNICAL ENGINEERING REPORT**

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## **APPENDIX F    PHASE I ENVIRONMENTAL SITE ASSESSMENT**

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